A PERSPECTIVE ON DISASTER PLANNING

Disaster Research Center

Report Series No. 11

Contract DAHC20-68-C-0117

Work Unit 2651-A

June, 1972

98

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)
Disaster Research Center
Department of Sociology
Ohio State University Columbus, Ohio

2a. REPORT SECURITY CLASSIFICATION
UNCLASSIFIED

2b. GROUP

3. REPORT TITLE

A Perspective on Disaster Planning

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)
One of a series

5. AUTHOR(S) (First name, middle initial, last name)
Russell R. Dynes
E. L. Quarantelli
Gary A. Kreps

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
June 1972	94	26

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
DAHC20-68-C-0117	Report Series No. 11
b. PROJECT NO. Work Unit 2651-A	
c.	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d.	

10. DISTRIBUTION STATEMENT
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
	Defense Civil Preparedness Agency Washington, D.C. 20301

13. ABSTRACT

This report presents a perspective, a way of looking at disaster planning. First, the characteristics of disaster agents, and the kinds of demands and requirements they generate, are considered. This is followed by an examination of widely held misconceptions of how people and groups behave in disaster situations. A contrast is then made between community activities and processes in normal times and during emergencies. Next, the basic elements involved in the organized response of a community to a disaster are set forth. The report concludes with a systematic discussion of disaster planning, including weaknesses in typical disaster plans and strategies for bringing about community emergency planning.

1

DD FORM 1 NOV 68 1473 REPLACES DD FORM 1473, 1 JAN 64, WHICH IS OBSOLETE FOR ARMY USE.

Unclassified

Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Sociology of Disaster						
Disaster Research						
Disaster Planning						
Organizations						

Disaster Research Center Report Series
No. 11

A PERSPECTIVE ON DISASTER PLANNING

by

Russell R. Dynes
E. L. Quarantelli
Department of Sociology
Disaster Research Center
The Ohio State University

Gary A. Kreps
Department of Sociology
College of William and Mary

for

Defense Civil Preparedness Agency
Washington, D.C. 20301

June 1972

Contract DAHC20-68-C-0117
Work Unit 2651-A

PREFACE

Why another report on disaster planning? In what way is this report different from many other available accounts prepared for emergency planners? These are valid questions that ought to be adequately answered, for if they are not, this publication should not appear.

Our answer is that in the following pages we are trying both to do something different and in a different way from what can already be found in the literature. There are, of course, many existing disaster plans, some designed for organizations such as hospitals, or larger social entities such as a community, or even broader areas such as a state or a region. But we do not set forth another specific disaster plan either for particular groups or geographic localities. Anyone interested in specific disaster plans can find more than enough models in the literature. There are likewise readily available general discussions of operational aspects of planning such as how to go about setting up emergency operations centers. We make no attempt to add another publication to that kind of literature.

The following report is different instead in two ways. For one, unlike most discussions of emergency planning, it is based on systematic studies of behavior and responses in actual disasters. Little of the literature draws its observations and remarks from the analysis of field research on what actually happened in a series of real disaster events. But the statements on the following pages are derived from the study of more than 100 community disasters conducted by the Disaster Research Center in the last seven years. Occasionally someone writes about his personal experiences in a disaster or two, but obviously this cannot match the range of different emergency situations we have looked at in all sections of the country. Our report is thus based on very broad data and evidence, and is not the result of sheer speculation or a few limited experiences.

The other way this report differs from most other writings on community disaster planning is that it presents a general perspective, a way of thinking about disasters rather than specific details. A reader of this report will not learn, for example, how many emergency generators a city of a particular size should have, but he will become aware in reading the report of the point that many of the problems that develop in disasters are generated not by the disaster agents themselves, but by the very effort of the community to react to the agent itself. This is to say that the response is often as much a source of problems as the disaster impact itself. Similarly, the reader should become sensitive to the most prevalent misconceptions about disaster behavior, although he will not learn from this report the specific persons who ought to be included in a fan out system for a disaster warning network. A reader will also not get from this report a statement of how a police department should operate in a disaster, but he ought to come to understand why conflicts between local community organizations and "outsiders" is an almost unavoidable consequence of a disaster.

In other words, this report attempts to make a reader aware of the major factors that have to be taken into account in disaster planning, what misconceptions about stress behavior have to be avoided in disaster plans, why certain problems are likely to arise despite what planners may do, and what can or cannot be planned.

What is presented is a general way of thinking about community disaster problems. The assumption is that the specifics of any given disaster plan have to be filled in by each particular reader depending on the nature of his community, the likelihood of threats to it, and the resources that are available.

We also assume that any kind of planning has to be realistic. It has to be built upon real knowledge -- thus our assertion that our observations do not stem from theoretical speculations but studies of actual disasters. Disaster planning has to be realistic also in that it cannot presuppose an ideal situation but the probable situation. This is why we stress throughout this report that good disaster plans are developed so that they can be adjusted to people rather than attempting to force people to conform to planning. Finally, disaster planning has to be realistic in the sense that it is taken for granted that planning can be undertaken. Persons with vivid imagination can always come up with hypothetical possibilities so horrendous that they serve to immobilize any effort at planning.

An example of the latter would be where a potential planner visualized a situation where his community would have to handle 10,000 casualties. Such a problem boggles the mind. A catastrophe of this magnitude could conceivably happen but it is very unlikely in American society. The largest number of deaths in any given disaster were the 5,000 or so killed in the Galveston hurricane-flood of 1900. In only three other disasters have casualties reached the 1,000 figure. Moreover, in recent years, the total average deaths in the United States in major disasters have averaged around 200 a year. A single major disaster is, therefore, extremely likely not to cause more than 100 deaths. This is a more realistic estimate, something that is more manageable and more amenable to planning. Our general point is that anyone can sit around and dream up all sorts of catastrophes which would defy almost any kind of planning. It is far more realistic to assume probable situations because that is what is likely to occur and for which community planning can be undertaken.

We make this point, implicitly at least, about disaster planners having to be realistic a number of times in the following pages. In fact, a number of points are made more than once although often in slightly different ways and contexts. However, we feel such repetition is necessary to convey what we consider the most important points involved in the development of efficient and effective disaster planning. We hope the readers of this report feel the same way.

Our focus is on natural disasters. They are the most recurrent and probable kinds of community emergencies in American society as a whole; others such as civil disturbances tend to wax and wane in cycles during different decades and still others such as nuclear catastrophes are simply hypothetical improbabilities for most citizens. Other kinds of emergencies, such as technological disasters stemming from massive power blackouts or deadly smog episodes -- while certain to increase in the future -- have been relatively infrequent so far in American society and would seem to necessitate far more than local community level disaster planning. Our interest is in the most likely kind of community emergency, and that which requires the major emergency response at the local community level.

However, while our discussion concentrates on natural disasters, there nevertheless should be some implications for planning for other kinds of community emergencies. Almost by definition, all emergencies share certain common elements. To the extent that they do, what we say about natural disaster response and planning can be generalized to other major kinds of community stress situations.

CONTENTS

CHAPTER I

ORGANIZING A RESPONSE TO DISASTER: THE PLANNING EFFORT

Introduction

Someone once suggested that Noah, with his ark, was the first disaster planner. He anticipated a threat, having a somewhat unusual and personalized warning system. Certain consequences seemed probable. Thus, Noah developed his response to the potential danger and implemented it by building his shelter and equipping it. He projected his manpower needs and had the capability to mobilize the necessary personnel. When the threat was realized, he rode out the storm in reasonable safety and, in not too many days, was ready to start on the recovery stage -- to begin to pick up the pieces to start a new world.

While Noah's story has been well remembered in subsequent years, his actions were not too different from the actions of many contemporary persons who one way or another, are engaged in planning for emergencies in many different types of communities around the world. They too attempt to recognize threats that are likely. Efforts are made to anticipate probable effects of a range of dangers and what countermeasures can be made to neutralize or soften disaster impact. Consideration is given to the difficulties associated with mobilizing persons and resources to deal with multiple pre- and post-impact needs. The ultimate goal in such planning is to enable an effective and efficient start towards the restoration of normal routines.

All this suggests that there may be certain general principles in the planning process itself, as well as specific problems that have to be dealt with by emergency plans. It is perhaps useful, therefore, to point out a few of the consistent general principles involved in planning so that they can be kept in mind throughout the subsequent discussion. We make no attempt to cover all relevant principles. The effort is simply to highlight a few of the more important ones.

Some Principles of Planning

There are a number of rather consistent principles of planning. Some of them are obvious and perhaps do not need too much emphasis. Others are not so obvious and do need to be stated. But since what is "obvious" can vary considerably from one person to another, both kinds are included below.

1. Planning is a continuous process.

In most ways, planning, if it is to be real, is not an action with a definite end. It is rather a continuous process whereby the persons involved develop procedures for future situations. As such, the development of a written plan

at a specific time is only a small part of the total planning process. Thus, to assume that planning is complete when a written disaster plan is produced is to court trouble. Plans need to be constantly kept up to date and revised as conditions change. In fact, as we shall note later, an unrevised or out-of-date emergency plan may create more of a problem than no disaster plan at all. Such a situation can give the illusion of being prepared and ready when this may not be the case at all.

2. Planning involves attempting to reduce the unknowns in a problematical situation.

The process of planning primarily involves attempting to anticipate problems and to project possible solutions. But while some planning can prevent certain events from happening, in the vast majority of cases plans can only alter or modify what will happen. This is particularly true in the case of natural disasters where, generally speaking, the disaster agent cannot be totally eliminated or neutralized. Thus, disaster plans can help to indicate the range of problems that will occur and possible solutions to them. In this sense, planning reduces the uncertainty of stress situations; it does not prevent the situation from happening. It is, in fact, very unwise to assume that everything can be planned for, that the unknowns of a disaster situation can be totally predicted ahead of time, and that because certain things can be correctly anticipated it will be possible to prevent them.

3. Planning aims at evoking appropriate actions.

At times it appears planning is thought of primarily as a mechanism of speeding up response to a crisis situation. It is true good planning may allow a quicker response to certain disaster problems. But that is more a byproduct than what ought to be a major objective in the development of plans. Appropriateness of response rather than speed of response is far more crucial. As we shall try to illustrate later, it is far more important in a disaster to obtain valid information as to what is happening than it is to take immediate actions. Reacting to the immediate situation may seem the most natural and human thing to do, but it is rarely the most efficient and effective response. The immediate situation is seldom that important both as to short run and long run consequences. Planning, in fact, should help to delay impulsive reactions in preference to appropriate actions necessary in the situation.

4. Planning should be based on what is likely to happen.

Some planners at times seem more oriented toward the most ideal situation which could be imagined rather than the possibilities which are realistically possible. This is unfortunate. It is far better to plan on the basis of what people usually do in normal situations and what they will probably do in emergencies, than to expect them to change their behavior drastically in disasters. In other words, planners have to plan on the basis of the most likely probabilities, not the untypical or unusual case. In this sense, as we shall try to detail later, planners must adjust their disaster plans to people, rather than expecting people to change their behavior in order to conform with emergency plans.

5. Planning must be based on knowledge.

In order to develop plans based on what is likely to happen, there is the need for accurate knowledge. Too often, as we shall note later, planners operate on the basis of myths or misconceptions about the responses of people and groups under stress. Thus, it is frequently but incorrectly assumed that the immediate problems of disaster involve uncontrolled behavior, looting, panic, and the like. This is not the actual situation facing emergency planners. Planners need to know not only for themselves but also for others, what does really happen in a disaster. Plans can only be designed and implemented if they are based on knowledge of actual problems and realistic solutions.

6. Planning should focus on principles.

There is a tendency, in developing plans, to elaborate them considerably. In fact, there is a strong temptation to go into very specific details. However, disaster plans in the main should focus on principles rather than concrete details. There are several reasons for this. It is really impossible to plan everything. Situations are constantly changing and specifics quickly get out of date. Too many details leave the impression that everything is of equal importance when clearly this is not the case. A complex and detailed plan is generally forbidding to most potential users and tends to be ignored. Thus, disaster planning, while it can not totally ignore details especially at the organizational level, should focus on general principles, and in that sense ought to produce simple rather than complex disaster plans.

7. Planning is partly an educational activity.

Involved persons and groups must know the disaster plans if they are to work. This requires a considerable amount of what might be called educational activity. The planner must learn about actual problems and possible solutions. He must teach relevant persons and groups in the community and some outside of it what their roles will be in an emergency. The planner must convey to anyone likely to become involved in a disaster response what can be generally expected. Too often planning is conceived of in the narrow sense of drawing up written plans. It is more useful and valid to think of disaster planning in the broader sense of educating oneself and others about what can be anticipated to happen, what the problems will be, and what are the most efficient and effective responses possible in a community emergency.

8. Planning always has to overcome resistances.

The advantages of planning for disasters are not always self evident to everyone, thus leading to automatic acceptance. There are many reasons for this. Some people believe they already know what to do and what to expect in emergencies. Some communities think they are not subject to disasters. In some instances, experiences in certain situations are believed to be almost totally transferable to other contexts (e.g., much of the theory of emergency planning has been developed by military personnel in military situations for military purposes, and there is sometimes a mistaken belief that such planning can be easily applied to a civilian context -- thus, for instance, the great

emphasis on obtaining "control" of the situation in the mind of some former military personnel involved in civilian disaster planning). At a more general level, planning requires changes in thinking and ways of doing things, not to metnion some expenditures of resources and effort. All these and other aspects that could be mentioned create resistances to disaster planning. It is, consequently, safer to assume that disaster planning will have to be "sold" to a community than to suppose it will be enthusiastically embraced when proposed.

Furthermore, as we shall note a number of times later, plans are not realistic plans if they are not exercised. For a variety of reasons, it is very important to have periodic dry runs and actual exercises of community disaster plans. However, just as there is resistance to emergency planning, there is even more likely to be reluctance and indifference to rehearsing disaster plans. Tests cost time, work and money. Thus, unless some officials and groups take initiative and leadership to practice plans in a realistic way, the absence of actual testing will negate even the best of abstract planning. It should be assumed actual trials of plans will have to overcome some community and organizational reluctance.

If all of the above principles are kept in mind, it will be easier to organize a response to a disaster. That is, it will be possible to mount a planning effort to meet an emergency. If disaster plans already exist, the principles ought to suggest how the planning can be kept viable and valid.

Organization of the Report

The rest of this report is divided as follows: The next chapter discusses some of the characteristics and consequences of disaster agents. Chapter III deals with some common myths about disaster behavior. This is followed by a chapter which examines some of the differences between community activities at normal times and during stress or emergency situations. Chapter V suggests a way of thinking about community responses in disasters. In the last chapter, we specifically consider disaster planning including a look at typical weaknesses in emergency plans of American communities.

CHAPTER II

CHARACTERISTICS AND CONSEQUENCES OF DISASTER AGENTS

Introduction

Because most people and organizations responding to disasters have not had prior experience and the response seems so immediately important, there is a tendency to see the situation and the response it demands as unique. However, on a national scale, major disasters are clearly commonplace. Over the last 20 years, for example, there has been an average of 17 disasters a year that have necessitated a declaration of disaster by the President of the United States. In addition to these major disasters, there are annually many more localized incidents that for various reasons cannot or do not lead to a presidential proclamation of a disaster. Some such incidents, while in one sense minor disasters, can be fairly destructive at least insofar as casualties are concerned. The Indianapolis Coliseum explosion, for example, resulted in 81 deaths and about 400 injuries even though the physical damage was confined to one part of one building in a very large metropolitan area.

At any rate, disasters -- major and minor -- happen enough that it has been possible to study many different cases and to analyze the problems, both individual and group, which are generated by them. In this chapter we consider the characteristics of disaster agents and their consequences as well as the demands generated in a disaster situation. Knowledge of the characteristics of disaster agents as well as disaster demands is crucial to community emergency planning.

Unfortunately, the term disaster is one of those words in the English language which has a number of meanings. It is commonly used to describe any personal or social situation which the speaker does not like. So a dull party becomes a disaster as does a football game in which one's favorite team loses. A presidential economic policy becomes a disaster if it affects one negatively as does a presidential election, if one's candidate does not win. More recently, population growth is labeled a disaster as is the result of urbanization on the environment. Conflict situations, such as riots, are sometimes called disasters.[1] The illustrations could be extended but it is obvious that the term "disaster" covers a multitude of sins of quite different dimensions.

The focus here is on those situations which are usually called "natural" disasters -- floods, earthquakes, hurricanes, tornadoes, etc., events not resulting from the deliberate acts of men. But even with this restricted usage, the term disaster is used to refer to different phenomena. Thus, the term frequently is equated with the disaster agent itself; i.e., the movement of land in an earthquake, the wind and rain of hurricanes, the flame and smoke of a fire, etc. It also sometimes refers to the <u>physical impact</u> which the agent has -- the resulting property damage and loss of life. The term disaster

also is often applied to the evaluation of the physical damage. In other words, the evidences of physical impact are evaluated as being disastrous. (It should be noted, however, that similar physical impact will be evaluated differently by different individuals and by different communities.) Finally, the term disaster can refer to the social disruption which has been created by the physical impact.

Our primary interest here will be in the latter meaning -- the possible social disruption which is created by physical impact. This is a particularly useful way of thinking about disasters, since disaster agents create tasks with which a community has to cope. It creates these tasks at a time when the problem-solving ability of the community may be damaged. To put it in its more unqualified form, a disaster agent makes demands on a community when the capacity of the community to respond to these demands may be also damaged by the effects of impact.

Different Dimensions of Disaster Agents

Disaster agents may and do vary along different dimensions. These dimensions and their variants can be combined in multiple and almost endless ways. Thus, it is all but impossible to develop a meaningful but simple typology of disaster agents.

Nevertheless, knowledge of how disaster agents may differ along one dimension is still useful for emergency planning. Such knowledge should sensitize the planner to possible variants that have to be taken into account. Furthermore, as noted below, some dimensions are more likely to be operative and varying in certain localities than others.

First, disaster agents vary in terms of their predictability. For example, an explosion or an earthquake is considerably less foreseeable than a flood which is brought about by a series of more precisely measurable factors. In fact, for some weather phenomena it is possible to obtain for specific localities the gross probabilities of a particular disaster agent striking the given area. For example, the chances of hurricane force winds in given Florida cities in any given year have been calculated. Thus, the chances for such winds are 1 in 50 for Jacksonville, 1 in 20 for Tampa-St. Petersburg, and 1 in 7 for Miami.[2]

A disaster agent can also vary in terms of its frequency. Although natural disasters may be relatively rare happenings, there are certain locales which can be labeled as disaster prone. To illustrate, some regions in the Ohio Valley are more susceptible to flooding, other areas such as in the Midwest are subject to tornadoes, and the Gulf coast is frequently confronted with the threat or occurrence of hurricanes. Thus, there are geographic, climatic, and other conditions which present the possibility of particular kinds of disaster and represent a sustained threat. Here again, gross figures for frequency can be obtained for some disaster agents. Thus, the National Weather Service has not only calculated tornado incidences by month (May being the highest), by state (Texas having the most), by square mile (Oklahoma having the highest), but also

in terms of threat when high tornado incidence and dense concentration of population is taken into account (Massachusetts with a rating of 347, Connecticut with a rating of 150, New Jersey with a rating of 136 being the three highest ranked states).[3]

A third factor to consider is the controlability of the disaster agent. Some situations allow for intervention and control which reduce the potential impact of the disaster agent. For example, flooding can often be anticipated and at least partially prevented, while other disasters such as earthquakes and tsunamis (so-called tidal waves), allow no such luxury. For example, in the early months of 1971 the National Weather Service predicted serious snow-melt flooding in the Upper Midwest and certain other areas of the country. But, as a result of effective flood-fighting actions taken by the Corps of Engineers, as well as slow warming with little or no precipitation, spring flooding in the Upper Midwest, the Northwest and Alaska caused no appreciable damage.

The next three factors all deal with time but should not be confused. Disaster agents differ in their speed of onset. For example, impact is sudden in tornadoes and flash floods, while other floods gradually crest. Also, some types of agents, such as earthquakes, may impact an area repetitively in a matter of hours. Length of forewarning is the period between warning and impact. Tsunamis or tidal waves generated by an earthquake illustrate the distinction between the above two factors. Length of forewarning of tidal waves may be several hours, but their actual speed of onset, once initiated, is very rapid. Disasters also differ in their duration of impact. For example, a tornado impacts an area for only a few minutes, but a flood's impact may be sustained for several days. The worst time combination from the viewpoint of damage potential is a disaster agent that is rapid in onset, gives no warning, and lasts a long time. An earthquake with strong aftershocks comes closest to such a threat.

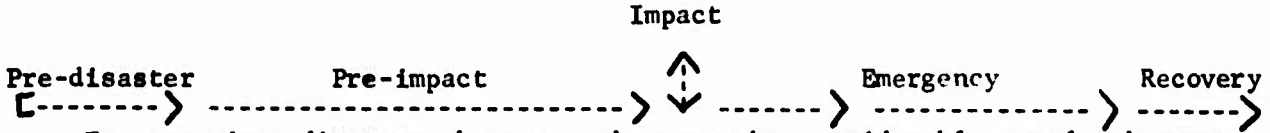
The final differentiating characteristics of disaster agents are their scope of impact and intensity of impact. Scope of impact is essentially a geographic and social space dimension. A disaster can be concentrated in a small area, affecting few people, or dispersed over wide areas, affecting large numbers. Intensity of impact reflects a disaster's potential to inflict injuries, deaths and property damage. These two factors should be clearly distinguished. For example, an explosion, though highly destructive, may affect only a limited geographic area, whereas a flood may be of low intensity but affect a broad geographic area and many people. This, of course, has important implications for the degree of disruption of local community affairs. A destructive but focalized disaster, though tragic, may have only minimal consequences for the community at large. Conversely, a diffuse but less destructive disaster may be extremely disruptive to everyday community living.

It should be noted that space or time dimensions underlie all of these features of disaster impact. And these dimensions are often crucial in terms of the actual extent of damage a disaster brings. For example, if there are large concentrations of people in the impact area during a certain time of day (say during the rush hour), this would have important implications for intensity and scope of impact. If there is substantial time between warning and impact, this allows for preventive actions. Other examples could be elaborated to show the

important relationship between space and time factors and the actual degree of disruption and damage. It should also be noted that by using these characteristics we can distinguish between disaster agents in various ways. Thus an explosion is generally unpredictable, has rapid onset with little warning, is of short duration, and has highly focalized but destructive impact. On the other hand, a flood is usually predictable, has gradual impact with considerable forewarning, is generally of long duration and diffuse scope.

Time Phases in Disasters

There are several discernible phases in the history of any disaster. The pre-disaster phase is the everyday situation in the community. A pre-impact phase begins with the earliest sign of possible danger and is the time between initial warning and actual impact. Warning may be official as in the case of a weather bulletin, or spontaneous such as the spotting of a gas leak by a passerby. The impact phase is that period when the disaster actually strikes. As mentioned earlier, this period may be of limited or long duration, from a few minutes (tornado) to several weeks or more (flooding). The emergency phase is the period of response to the immediate demands presented by the agent. Recovery is the final phase and includes attempts to mitigate any long-term effects of the disaster agent and return the community to normal, everyday conditions. These phases are illustrated in the following manner:



For any given disaster, however, there may be considerable overlap between phases. Pre-impact and impact phases may overlap when there are multiple threats of impact. For example, earthquakes are often followed by tidal waves and tornados and hurricanes often pose additional secondary threats such as flooding, mudslides, downed power lines, health hazards or precarious building safety conditions. There are many examples of this kind. The impact and emergency phase will overlap, of course, when there is prolonged impact as in the case of sustained flooding. Finally, the distinction between emergency response and recovery is often vague. These two phases distinguish between immediate emergency problems and long-term restoration efforts. An example of the former would be search and rescue, and of the latter, various kinds of rebuilding programs.

These distinctions among various phases are arbitrary, but each of them captures different sets of disaster demands. For example, the pre-disaster demands should be pre-planning or preparation for possible disaster occurrence. Pre-impact periods demand warning and preparation for impact. During actual impact, the most immediate demands are survival or minimizing the effects of the agent. The emergency phase presents a host of immediate demands such as search and rescue, care of casualties and survivals, maintenance of order, and so forth. Recovery involves the long-term rehabilitation of the community.

These emergency demands will be elaborated in somewhat greater detail in the last part of this chapter. However, the actual impact of the disaster and the demands presented vary significantly depending upon the characteristics of the disaster agent.

Disaster Demands

There are essentially two types of demands we would like to discuss. The first set is those demands which are generated by the disaster agent as it impacts the community and are labeled agent-generated demands. In responding to these demands, the community will then be confronted with a new and more general set of demands; these are designated as response-generated demands. The distinction will become more clear as the discussion continues. Both of these sets of demands must be given consideration in disaster planning.

Agent-generated demands

1. Warning: Some disasters (explosions, earthquakes) allow for little if any warning. However, many disasters do not occur without some prior indication of danger. In these situations, warning can be the most important aspect of organized disaster response in minimizing human and material loss. For a community in disaster, warning is a particularly important demand. Information concerning the possibility of disaster occurring, its intensity, duration and scope, may save lives, reduce injuries and property damage, and minimize the disruption of community affairs. Warning includes detecting and predicting the occurrence of a disaster agent; dissemination of this information as well as information about ameliorative or protective action to the public and community organizations; and receiving such information from available sources. As was mentioned earlier, complete warning is only possible in certain kinds of disaster. Hurricanes provide significantly more warning time than do most explosions. Of course, an important problem in all warning systems is getting people to accept the threat as legitimate and serious.

2. Pre-impact Preparations: This demand assumes that warning has occurred and there is time for some preparations to be made. Problems here include the readying of human and material resources for response, the institution of measures to lessen the actual impact of the disaster agent, and steps to limit the consequences of impact. For example, readying of resources might include activating equipment, call-up of personnel, stocking goods, etc. Measures to lessen impact include factors such as sandbagging or diking, immunization, placing residents in shelters, etc. The best example of measures to lessen the consequences of disaster would probably be the evacuation of individuals from a projected impact area.

3. Search and Rescue: The basic demands here are the location, rescue, and transportation of entrapped persons to places of safety and assistance. A directly related demand is having the necessary equipment and qualified personnel to undertake rescue efforts. For

example, in some cases heavy earth-moving equipment may be required, along with trained people to operate that equipment safely and efficiently.

4. Care of Injured and Dead: Disasters usually exact a toll in deaths and injuries. This demands some measures for the care of casualties. The injured must be moved rapidly from the impact area to locations of medical help and supplies. Assignments of priorities in treatment or the establishment of a triage system often becomes mandantory since it may mean the difference between life and death. The dead also present a disaster demand. Fatalities must be removed from the impact area to some sort of permanent or temporary morgue facility. In addition, the dead must be identified, cause of death determined and certified, bodies released to claimants, and finally buried. This requires the mobilization of qualified personnel from coroners to fingerprint experts to funeral directors.

5. Welfare Demands: Measures must be instituted to provide the basic needs of survivors. Among these are food, clothing, and shelter, although the specific requirements will vary considerably depending on a variety of circumstances. In addition, disaster workers require some of these same services if they are to operate effectively. In many cases these services must be provided in the public domain.

6. Restoration of Essential Community Services: In order to attain a high degree of recovery in the immediate post-impact period, the community must restore services necessary for its functioning. Restoring, at least temporarily, such services as gas, electricity, telephone, water, transportation, etc., thus becomes very important. For example, casualty care depends upon maintenance of many of these services in hospitals as well as transporting the victims to the medical centers. Telephones may be crucial for communication and assessment of disaster needs, etc.

7. Protection Against Continuing Threat: Hazards may be created by damage to buildings, live power lines may be exposed, rockslides may be imminent, aftershocks or tidal waves following earthquakes may cause additional damage. There may be public health problems also. Water and food supplies may be polluted and animal carcasses have to be disposed before decomposition sets in. Perhaps most important of all, there is the need to combat fires which frequently break out even when the prime disaster agent is of a non-fire nature. All of these examples of secondary threat create demands which must be addressed, since they could be as damaging as the initial disaster agent (and in the case of fire, often even more damaging).

8. Community Order: Several specific demands are included here, such as guarding property, patrolling danger areas, and particularly directing traffic near the impact scene. There is also the more general demand of seeing that community resources, both public and private, are used for common community ends.

Response-generated demands

1. Communication: Rapid and accurate communications are the basis of effective emergency response. If one does not have adequate communications, one cannot effectively meet the other emergency-response demands. One of the major demands in disaster is information; information about victims, essential resources, crises, location of services, confirmation of warning. Every agent-generated demand has some informational aspect. This means that there must be some means of information transferral; i.e., a communications system. It is essential for the public; organizations require it internally for meeting their demands; and it is central to interorganizational relationships as individuals and organizations attempt to coordinate response. Thus, communications must be given careful consideration in planning. Quite simply put, without communication, coordination becomes impossible. Given these heavy informational demands, existing communications networks may be inadequate or break down. For example, there may be a scarcity of skilled personnel to man facilities. Or, traditional channels may no longer be appropriate. For example, organizations which have had no previous contact may find they are working in the same sphere of activity and therefore require coordination. In this case new channels must be made open and operative, misinformation kept at a minimum, and legitimate requests for information fulfilled.

2. Continuing Assessment of Emergency Situation: A virtually constant demand in disaster situations is an overall appraisal of what is happening. Of course, this is in part an informational problem; where there is not reliable data, assessment will be inadequate and confusion will result. Assessment is crucial because of its direct relationship to organized action. In other words, it is an integral aspect of decision making. Appropriate actions are determined on the basis of what needs are seen as being relevant in any given time or location during disaster. The demand is constant because disaster is a very fluid phenomenon and often needs change from minute to minute. Given this state of affairs, any unit responding to disaster-generated demands must know the status of that particular demand area so that it can respond appropriately and effectively. It must also gauge the relative importance of different demands which may be simultaneously operative so as to expend its efforts in the most advantageous direction for the community as a whole.

3. Mobilization and Utilization of Human and Material Resources: Disasters, just as everyday situations, require the utilization of human and material resources. Personnel must be recruited, trained and mobilized. Necessary resources must be acquired, maintained, and allocated for appropriate activities. Disaster situations, however, present the often acute problem of the allocation of crucial human and material resources. Equipment may not be located at points where it is most needed. Specially trained personnel may not be immediately

available and there is no time for training. The location of relevant resources in the community may not be known; hence valuable supplies may go untapped. Given these possible contingencies, the central demand is to effectively utilize in disaster response those resources which are available. For example, when there are large numbers of volunteers with no particular assignment, they must be distributed to areas where they can be used most efficiently. If specialized equipment is offered, it must be placed where it will do the most good. In effect, human and material resources must be fit together in the most useful way to meet disaster demands. It becomes, then, a matter of coordination.

4. Coordination: The general demand of coordination underlies much of what we have been discussing and is the essence of good planning and operations. In normal times, overall coordination of the community is generally not relevant as various community organizations can carry out their activities in large measure independent of one another. However, during disasters some coordinative mechanisms are necessary to allocate the resources of the community in such a way that high priority needs are met. Many individuals and organizations become involved in non-traditional activities and this makes the demands more acute. Problems and situations must be assessed and decisions made. Information gaps have to be filled. Activities and the relationships between activities must be clarified. Resources have to be allocated and distributed. There must in effect be some centralized activity brokerage system. Spheres of activity have to be determined largely on the basis of the agent-generated demands mentioned earlier. Human and material resources must be allocated appropriately to these activities. Boundaries between organized responses have to be specified so as to circumvent unnecessary duplication. Finally, any new contingencies emerging over time must be incorporated in this overall response strategy. Coordination is therefore a key to planning.

5. Control and Authority: Coordination is not possible without some system of overall control and distribution of authority. There must be people who have responsibilities, who are in charge, and whose authority is legitimated. As stated, spheres of organized activity are relatively independent during normal periods. This lack of overall control will simply not suffice in disasters. A general tendency in disaster situations is for new authority patterns to emerge. An individual's authority may be legitimated by his technical competence, his preparation, or his degree of information about the on-going situation. Likewise, organizations which are loci of communication, have a disaster technology, or are especially prepared in some way often exert considerable control and coordination. The authority of these individuals and organizations is accepted for these same reasons. The fact that police departments often become centers of coordination in response efforts is a good example. Reiterating, the traditional or pre-disaster community contains coordination gaps which must be filled in disaster situations. In order to fill these coordination gaps, there must be an associated system of authority and control.

In any given disaster situation, of course, the characteristics and consequences of the disaster agent are all part of a global picture and not neatly separated into different dimensions and demands as we have just discussed. However, that is part of the point of planning, the necessity of breaking the whole down into parts so that the situation becomes manageable. To attempt to react to the whole, to the global picture, is usually to end up reacting in totally inefficient and ineffective ways. The problem furthermore, as we shall detail in the next chapter, is frequently compounded by the fact that inexperienced planners and disaster workers usually have markedly incorrect conceptions of what acutally occurs before, during, and after the impact of a disaster agent.

FOOTNOTES

1. There are important differences between emergencies of a conflict nature such as riots and emergencies of a consensus nature such as natural disasters which we will not discuss in this report. Anyone interested in some of the basic differences should read the January/February 1973 issue of the American Behavioral Scientist which is devoted exclusively to studies of organizational problems in civil disturbances.

2. Gordon Dunn and Banner Miller, Atlantic Hurricanes (Baton Rouge, La.: Louisiana State University Press, 1964), p. 269.

3. There data were taken from U.S. Department of Commerce National Oceanic and Atmospheric Administration, Severe Local Storm Warning Service and Tornado Statistics 1953-1969 (Washington: U.S. Government Printing Office, 1970.

CHAPTER III

IMAGES OF DISASTER BEHAVIOR

One major problem of planning is that it has to be done in the face of rather widespread ideas of how people behave in disasters. This would create no difficulties if such ideas or conceptions were correct ones. Unfortunately, this is not the case. Many of the most widespread conceptions are simply incorrect.

Compounding the problem is that such misconceptions are also often accepted by officials and other individuals involved in responding to and planning for disasters. Incorrect ideas have become embedded in planning and are frequently the basis for specific decisions during disaster operations.

Given these two factors, in this chapter we will first discuss some of the popular images of disaster behavior and their implications for planning. We will then consider in some detail, actual disaster responses. The chapter concludes with some implications for emergency planning and response if the real rather than mythical disaster behavior is taken into account.

The Popular Image

The popular image of disaster behavior usually centers on themes of personal and social chaos. Among these popular images, stated here in their more unqualified form, are the following:

1. People when faced with great threat or danger will panic. This takes the form of either wild flight or hysterical breakdowns. Even if the response is not intrinsically self destructive, it will generally involve giving little consideration to the welfare and safety of others. Persons can not be depended upon to react intelligently and non-selfishly in situations of great personal danger.

2. Those who do not act irrationally are often immobilized by major emergencies. Thus, disaster impacts leave large numbers of persons dazed, shocked and unable to cope with the new realities of the situation. In addition to a person's initial inability to cope with the situation, the longer run personal effects are rather severe emotional scars and mental health disturbances. Paralyzing shock is followed by numbing symptoms of personal trauma.

3. Partly because of widespread individual pathological reactions and partly because of the overwhelming damage to the resources of disaster-affected communities, the ability of local organizations to perform effectively in handling emergency tasks is severely limited. Not only do such organizations have to cope with the irrationality of others, but their own personnel are so immobilized by threat and damage that they cannot fulfill their necessary occupational tasks. Therefore, local organizations are ineffective agents to handle local emergency problems.

4. The social disorganization of the community which is a product of disaster impact provides the conditions for the surfacing of anti-social behavior. Since social control is weak or absent, deviant behavior emerges and the dazed victims in the disaster area become easy targets for looting and other forms of criminal activity. Crime rates rise and exploitative behavior spreads as Mr. Hyde takes over from Dr. Jekyll.

5. Community morale is very low in disaster-stricken areas. Since impacted localities are filled with irrational, disorganized and helpless persons and immobilized groups, the future of such communities appears bleak and problematical. Residents, even those not directly impacted, prepare to leave and there is a reluctance to reopen and rebuild shattered businesses and industries.

6. A descent into total personal and social chaos is possible in such stricken communities. Immediate and firm and unequivocal measures are necessary to prevent such a deterioration. But in general local and established community officials lack the resources and are so shaken by the disaster that they cannot take the drastic steps required.

This is a grim picture indeed, if true. But true or not, this is the most widespread image of disaster behavior. As such it has important consequences in how people and groups prepare for and respond to disasters, even though the picture is a false one in almost all details.

Implications for Planning

Many, perhaps most, images about human behavior have minor social consequences. Most conceptions primarily affect how an individual views others in the social world around him. Images about disaster behavior, however, have important social consequences since they become the major basis for making critical decisions on the part of organizational and political officials in disaster operations. As we have indicated, the popular images of disaster behavior center on the themes of personal and social chaos and these seem to be based on the assumption of the frailty of the human personality and the tenuousness of social organization. The personality integration and social cohesion which exists in normal times is always fragile and brittle, and becomes unglued in crisis. Taking each of the six conceptions mentioned earlier, certain policy and planning implications follow.

1. The impression that persons act irrationally and panic in crisis situations leads to cautiousness in the formulation and issuing of warning messages. Knowing that persons are not able to handle threats to themselves with any degree of rationality, warnings should be withheld until the last minute when the consequences of the panic which would result and the damage that would come from disaster impact are somewhat equal. In other words, warnings should be given at the last minute. The potentialities of the disaster impact are always more uncertain than the inevitabilities of irrational personal behavior.

2. The notion that disaster impact leaves large numbers of persons shocked and dazed contributes to a concern for the provision of immediate assistance on the part of outside agencies. The idea that victims are unable to cope with the

new situation which confronts them suggests that agency help is not only mandatory but any delay in it would be catastrophic. This view is further supported by the belief that even after the initial shock, many persons are so emotionally disorganized that they need outsiders to do the most elementary tasks for them such as being fed, housed and clothed. In line with this, certain kinds of aids and supplies should be sent unsolicited to large-scale disaster areas since it is almost certain they will be needed.

3. The supposed preponderance of irrational and disorganized individuals also has its consequences for the ability of local organizations to function effectively during the emergency. In particular, the effects of what is known as role conflict are major stumbling blocks. Since all persons have many different sets of obligations, basi obligations to one's own family take precedence over occupational responsibilities, and therefore, the effectiveness of key officials in local emergency organizations will be hampered. To make up for this loss, organizations must mobilize several times the number of persons that they need in order to get a reasonably adequate number so that the group can function. Because of such a loss of personnel, outside agencies must assist since they are unencumbered by these problems.

4. The presumed surfacing of anti-social behavior in disaster necessitates particular attention to security measures. Over and above the new tasks which are created by disaster impact, an increase in the allocation of resources for security is also necessary. Since the local community is overwhelmed, these forces should be drawn from the military. In addition, to facilitate this increased security, perhaps martial law should be invoked. Certainly because of the social disorganization and anti-social behavior which emerges, not only must the highest priority be given to security measures but such forces as are used should be as large and as conspicuous as possible.

5. Since it is believed the morale of community members is low after disaster impact, steps have to be taken to assure victims there is a future for them and their area. Such demoralization can be partly countered by quick visits of important public officials from outside the stricken area. More important, to show the victims they are not forgotten, massive aid should be brought in and widely publicized. Preferably this aid should be handled by non-involved outsiders who are in a better position to make balanced judgments than dazed and demoralized local officials.

6. Since it is believed disaster-stricken communities are faced with total collapse, there is an accompanying belief about the need for the assertion of strong leadership. While this leadership might come from political officials with emergency responsibilities, it is far more likely that in crises certain "natural" leaders will emerge and "take over." Such leaders are more likely to come from persons who have had military experience and who "think" in these terms. In case that such natural leaders do not emerge, strong leadership has to be provided <u>for</u> the community. Since the disorganization makes local persons incapable of making judgments, the decisions necessary to save the community must be made by outsiders who are more rational.

There are other policy and planning implications which emerge from the images of disaster behavior but most of them follow a similar theme. They are all based

on the "weakness" of average individuals and the fragility of typical social organization in coping with crises events. On the other hand, such policy places great faith in the capacity of a few rational strong leaders, usually those who with "command and control" experience and often with outside agencies and/or resources, to cope with the irrationality and disorganization. Planning for disaster, then, should focus on developing mechanisms to maximize the decision-making capabilities of these leaders.

Typical Disaster Behavior

While the previous statements point to rather widespread images of disaster behavior, there is also a large body of knowledge about actual disaster responses which is based on repeated observations by many different observers in a variety of emergency situations. These observations provide a sufficient base on which to evaluate the validity of these popular images. In fact, they indicate that the popular images are almost totally incorrect.

1. The idea that people will panic in the face of great threat or danger is very widespread. However, it is not borne out in reality. Insofar as wild flight is concerned, the opposite behavioral pattern in most disasters is far more likely. People will often stay in a potentially threatening situation rather than move out of it. This really should be expected. Human beings have very strong tendencies to continue with on-going lines of behavior in preference to initiating new courses of action.

An unwillingness of residents to withdraw from threatened localities has been documented for disaster agents ranging from floods and avalanches where there is usually considerable forewarning to tornadoes and explosions where warning time might be rather short. While press accounts frequently report "thousands" or whole communities fleeing upon the receipt of hurricane warnings, systematic studies of such situations do not bear out many such reports. In most cases the evidence indicates that the withdrawal behavior that does occur is primarily by transients including tourists and not by the resident population. Even when there is evacuation of an area, the majority of people simply do not leave.

By far, the largest and quite unprecedented evacuation in recent American history occurred in the face of Hurricane Carla in 1961, where more than a half million people left coastal areas in Texas and Louisiana. However, despite an extremely intensive warning campaign, a clearly recognized threat, and the fact that more than half of the population (52 percent) had more than four days of warning, a majority of the residents never left their own areas. About 35 percent remained in their own homes and another 22 percent stayed in their communities primarily at the homes of friends and relatives.[1] Another study of a New England city hit in quick succession by two hurricanes showed that only 4 percent of the inhabitants evacuated each time.[2] It is clear from the overall evidence that far from fleeing precipitately at signs of warnings of danger, it can be assumed that the bulk of people will probably not move at all. Certainly there is far more of a problem in getting movement than there is in preventing unruly or disorderly flight or wild panic -- in fact, there is no real comparison between the two problems since the latter one almost never exists.

There is, furthermore, a frequently overlooked but fundamental difference between panic and flight behavior. The two terms both refer to withdrawal from a situation; they are otherwise not equivalent. Panic behavior is where the individual flees without any consideration for others. But the vast majority of withdrawal behavior takes the form of flight behavior. Flight from a threatening situation involves playing traditional social roles including the taking care of others. Drabek in a study of sudden evacuation in the face of an immediate flood threat in the Denver metropolitan area in 1965 found that 92 percent of family members left together, confirming a hypothesis advanced some time ago by Moore in Texas hurricanes that families moved as units and remained together despite public pressure at times to do differently.[3] Even in very precipitous flight, fleeing groups often make attempts to assist strangers in getting away from a seemingly immediately dangerous situation. Mutual aid rather than panicky abandonment of others is a very manifest characteristic of withdrawal behavior in the presence of danger.

Furthermore, if panic does occur in a disaster situation it is almost never on a large scale. Panic episodes tend to be extremely localized, involve very few participants, and are of very short duration. One observer who has been studying panic behavior for the last twenty years suggests that he would be hard pressed (outside of a military context) to cite more than a small handful of clear-cut instances of panic behavior where more than three or four dozen people were involved at the most. The often cited example of the "panicky" reaction to the famous Invasion from Mars broadcast, upon close examination, shows there was extremely little behavior leading to the cessation of traditional role playing or much flight behavior for that matter. In fact, one survey study of the event reported that 84 percent of the audience was in no way even disturbed by the broadcast.[4] Many supposed instances of "mass panic" upon serious examination turn out to be crisis situations where some people were frightened or concerned but whose behavior took forms other than unruly flight or disorganized activity.

Even in those rare situations where panic on a small scale does occur, the majority of persons involved in such situations seldom engage in panic behavior. Even in such historically famous cases as the Cocoanut Grove night club fire, the available evidence fairly clearly suggests that panic was not the modal form of withdrawal even in that highly circumscribed emergency situation; actually many persons died from asphyxiation before they could realize there was danger. The majority that escaped generally sought out alternate escape routes in a reasonable fashion with friends. Here as well as in other similar situations there was none of the widespread contagion that a panicky reaction is supposed to evoke automatically among those exposed to it. There was of course some panic behavior in this situation as well as other famous cases such as the Iroquois Theater fire. But it requires a very unusual set of circumstances involving perceptions of probable personal entrapment within a limited spatial area, possible closing of escape routes, an extremely sudden and very direct threat to life, as well as abandonment of self by others in the immediate vicinity to have the possibility of panic behavior. These are a combination of circumstances that on the whole are usually not present in any degree from most disaster situations.

Sometimes the term panic is also applied to extremely disorganized personal behavior, where the individual almost literally collapses in an hysterical

breakdown. This phenomenon so rarely occurs in disaster situations that it is not a practical problem. Of the many possible ways of responding to signs of danger, this is an extremely unlikely probability for any given individual and it is only a highly remote theoretical and statistical possibility if reference is to any large group or aggregation of persons so reacting in a crisis. When people see signs or receive warnings of danger, they generally assess the credibility of the information and the likelihood of danger to themselves and others. If the cues they receive are viewed as credible, alternative courses of action are considered. An old pre-Mao Chinese proverb notes the rational, adaptive nature of one alternative possibility: "Of the thirty-six ways to escape danger, running away is best." Accordingly in some cases endangered persons will see withdrawal from the danger as the most intelligent step possible in the given situation. They will then move out of the situation taking others with them. While this is not as dramatic a picture as one frequently drawn by fiction writers of hordes of animal-like creatures fleeing wildly and acting hysterically when they find themselves in danger, what actually happens is somewhat duller but also more reassuring.

2. Just as the panic image of disaster behavior is generally incorrect, so is the view that disasters leave victims dazed and disoriented both at time of impact and in the recovery period. Those who experienced disasters are not immobilized by even the most catastrophic of events. They are neither devoid of initiative nor passively dependent and expectant that others, especially relief and welfare workers, will take care of them and their disaster-created needs. In fact, disaster victims sometimes insist in acting on their own even contrary to the expressed advice of the public authorities and formal agencies.

A form of shock reaction, called a "disaster syndrome," has sometimes been observed in the aftermath of relatively sudden and extensive disasters. This reaction involves an apathetic response and some disorientation in thinking. However, the "disaster syndrome" does not appear in great numbers of people; seems confined only to the most sudden traumatic kinds of disasters; has been reported only in certain cultural settings; and is generally of short duration, hours only, if not minutes. One study of an extremely extensive tornado, using an area probability sample, found that only 14 percent of all victims may have manifested some aspects of the initial stages of the syndrome.[5]

In general, disaster victims react in an active manner, and do not wait around for assistance by outsiders or offers of aid from organizations. On a large scale they show considerable personal initiative and a pattern of self and informal mutual help. When shelter is needed for example, displaced persons seek the aid of and move in with other family members, intimates and neighbors. When about 10,000 were made homeless in a tornado in Massachusetts, less than 5 percent sought aid from and were housed by the public authorities.[6] In the massive evacuation preceding Hurricane Carla mentioned before, more than three-quarters of the evacuees went to other than public shelters; 58 percent in fact went to private homes of friends and relatives.[7] In a California flood, only 9,260 persons out of over 50,000 evacuees registered in the 38 Red Cross shelters available in 13 towns in the disaster area.[8]

This pattern of mutual and self help also prevails in other disaster-related activities besides that of obtaining shelter. In one community emergency after

another, victims repeatedly show an ability to cope with most immediate disaster problems except those necessitating special equipment or highly specialized skills as might be involved in some kinds of medical treatment. For example, a study of the Flint-Beecher tornado in 1953 found that the victim and fringe area population, with almost no aid from formal organizations, were able within three to four hours to rescue and bring to hospitals from two-thirds to three-fourths of the 927 casualties sustained in the area. In fact, less than 20 percent of the disaster-impacted population had any contact of any kind with disaster agencies during the early hours of this disaster.[9]

Even in the most massive of disasters, formal agencies appear to contact only a fraction of all victims. This is partly borne out by the official statistics of the American National Red Cross. It is clear that emergency mass care is given to but a relatively small proportion of victims in any of the organization's principal disaster relief operations. For example, in Hurricane Betsy in 1965, the Red Cross assisted 34,476 families out of 178,548 who had suffered some degree of loss. This is less than 20 percent of the total in an operation that was one of the three greatest disaster relief undertakings in American Red Cross history.[10]

The evidence in fact is rather strong that far from seeking and being dependent on formal disaster organizations, these are the last sources that victims turn to for help. There is actually a hierarchy of assistance seeking that runs from the more informal, intimate groups to formal, less familiar organizations. Thus, people first seek help from family and intimates; then they turn to larger membership groups to which they belong (e.g., churches, work places, etc.). They look next to other individual members of the community. Only if these sources prove unresponding or unavailable do they seek assistance from the more impersonal formal organizations, such as the police and welfare departments. Last to be sought are special disaster agencies.

Activity rather than passivity of victims characterizes not only the immediate emergency impact period but also the longer-run rehabilitation stage. In other words, disasters do not generally have disabling emotional consequences or leave numbing mental health problems among any large numbers of their victims. It is true that a majority of the population in disaster-struck areas typically will show varying degrees of stress reactions in the aftermath of a major emergency. For example, the NORC study mentioned earlier found that after the tornado 68 percent of the victim population experienced some protracted physiological or psychosomatic reaction such as sleep disturbances, loss of appetite, headaches, and so on.[11] However, what is important is that such reactions do not basically affect the willingness and ability of people to take the initiative and to respond well in the recovery effort. This is true even when the disaster has been a major one.

For instance, Bates and colleagues made a study of a Louisiana parish where 8.4 percent of the residents had been killed by Hurricane Audrey, an unusually high figure for an American disaster. They not only conducted a survey of the victim population but also examined school records, reports of physicians and commitment and intake data of hospitals. Their conclusion was that while the victims were more sensitive to weather cues and generally more "nervous," there

clearly was no evidence of high incidents of serious emotional disorders either in children or adults which could be associated with the disaster.[12] The victims were able to function well in their recovery efforts. Another study showed that in the months following Hurricane Carla, there was not only a drop in neurological and psychiatric classifications in both out-patient as well as in-patient clinics in the impacted areas, but also a diminution of symptoms among neurotic and psychotic patients.[13] In other words, disasters not only fail to evoke paralyzing emotional reactions among previously healthy persons, but they do not even make previously mentally ill or disturbed persons any worse.

These kinds of observations parallel what has been observed also in wartime situations, either among civilians or the military. Even under very severe stress, people do not become either totally irresponsible and dependent, or completely impotent and immobilized. Rather they attempt to solve in an active fashion, especially in conjunction with others, both their short-run and long-run problems in those ways which seem reasonable to them as they perceive the crisis situation. In general, the same can be said of the vast majority of disaster victims as generally has been said of combat soldiers by Gringer and Spiegel: "Under the most harrowing circumstances, they are able to control fear or anxiety, to think clearly and to make appropriate decisions with rapidity."[14]

3. The assumption that local organizations are unable to cope with disasters is based both on the notion that these organizations and the communities in which they are located are overwhelmed by disaster impact, and also by the fear that the employees of these organizations are so affected by disaster impact that their efficiency is reduced. Neither of these notions stands up well under close observation.

The notion of communities being overwhelmed is usually derived from overestimating the amount of disaster-occasioned demand on facilities and underestimating the number of resources still available after impact. In all disasters in recent years in the United States, the amount of destruction in relation to total resources is quite low; the same is true with regard to the ratio of casualties to the total population base involved.

For example, Anchorage, the largest city in Alaska, had about 50,000 persons with an additional 50,000 in the surrounding areas, including a large number of military personnel. The metropolitan area did experience extensive property damage in the 1964 Alaskan earthquake, but only one hospital eventually had to be evacuated. The earthquake occurred at 5:36 on a Friday evening. Practically all of the victims of the impact were found and removed before dark on the first night. There were five hospitals in Anchorage, two of them private, and nearly all of the casualties were brought to one hospital. Of its 155 beds, only 75 were occupied at the time of the earthquake. From the time that the first casualty arrived at 6:15 p.m. until midnight, 21 casualties were received; three were dead, seven were admitted and the rest sent home. In the next two days, this hospital handled 89 emergencies; of these 18 were clearly earthquake victims while the rest were "normal" emergencies and persons injured while working with debris. At no time did inpatient census exceed 123 during the emergency. While the death rate in the Anchorage area as a result of the earthquake was finally determined to be seven, this is a much lower figure than initial reports suggested and that most persons remember. (In the entire state, the overall figure was close to 100.)

By contrast, a disaster which did provide probably the largest number of casualties in a concentrated area in the United States in recent history was the Indiana State Coliseum explosion in Indianapolis in 1963. Fifty-four persons were killed immediately and nearly 400 others were injured. Twenty-seven of the injured later died, raising the total to 81. The victims went to over 20 different hospitals, both in Indianapolis and in surrounding suburbs and towns, but 310 were treated in 7 hospitals within the Indianapolis metropolitan area. The casualties were not, for various reasons, distributed to the hospitals in a manner which took into account their capacity and ability to handle large numbers of emergency cases, but the hospital which handled the largest number of victims (120) had a bed capacity of 816 and was able to accommodate the 65 who were subsequently hospitalized. At this hospital, all emergency surgery as a result of the explosion was completed by 6:00 a.m., seven hours after the explosion and all of the scheduled operations for the following day, except tonsillectomies, were performed. The point here is not to underestimate the difficulties of handling this large number of casualties but to emphasize that within that community, the seven hospitals with a bed capacity of well over 2,800 with the associated personnel to man and maintain such facilities were able to cope with the 310 casualties including the 143 who were subsequently hospitalized. Since some of the hospitals got the bulk of the victims, this also meant that other hospitals were scarcely affected by the consequences of the explosion. For example, one hospital with emergency room facilities and a 727 bed capacity received only one victim. This hospital and several others could have handled a much larger number of casualties.

While individuals will often report their own personal difficulties in handling overload situations, the resources which are available within almost every community are capable of initially handling the problems created. For example, take a situation where a disaster agent creates a high level of property damage, in a community of 100,000 persons and destroys the housing of 10,000 persons; this means that 90,000 still have homes. Neighbors and relatives are usually more than accommodating in such situations. Since there are alternatives available, victims usually do not seek out public agencies to provide shelter. While shelters can be set up in the many public and private buildings which are still left and can serve a marginal function, most "displaced persons" will seek their own accommodations. Even in a massive evacuation such as preceded Hurricane Carla, only 23 percent of the evacuees took refuge in public shelters, and this is an extraordinarily high figure for an American disaster. Again this is another kind of situation in which the adaptability of persons within the disaster area is underestimated as well as the demand overestimated.[15]

Outsiders' judgment of community needs in almost every case underestimates the basic resources which are still available in most communities. Food supplies, available in households, retail groceries and in wholesale warehouses are usually sufficient to maintain all the members of most communities for several weeks. Clothing is generally not needed on a large scale except in the unlikely event that all of the persons in the area were walking around naked when impact occurred. Medical supplies are in most instances available in hospital stocks or by wholesalers within the community or nearby. During the emergency period, persons in the impact area do not eat more than they usually do. (In fact, one might make the case that, in some instances, they might eat better since power disruptions often cause havoc with frozen food supplies. This sometimes makes anticipated

delicacies available at unexpected times.) People do not dress in a more fashionable way. In fact, casual dress is the norm. Nor is the casualty rate so high that it cannot be absorbed by locally available medical supplies, personnel and facilities.

The overestimation of demand also leads to the assumption that when a large number of persons is affected by a disaster agent, those who man local organizations will be unable to fulfill their emergency responsibilities. This has not been shown to be the case in experience. Only in the most exceptional situations are personnel in local organizations affected so that they are unable to cope with the immediate emergency demands. Those organizations which have the most immediate relevance to emergency needs, such as police, fire departments, hospitals, etc., have a larger number of personnel available to man their organization than is needed at any one time. Such organizations, since they traditionally operate on a 24-hour basis, have from two to three times the number of personnel necessary. Such personnel know they may be needed in such emergencies. Therefore, they stay on the job after their shift is finished or they report to duty, either on their own or on notification. In one Chicago suburban 400-bed hospital, some 75 physicians and 20 interns were on the scene within several hours to treat 187 victims after a tornado struck nearby. Thus, there was a ratio of one highly trained medical personnel, excluding dozens of nurses, available for each two victims.

In addition to the "excess" personnel available in the more critical emergency organizations, there are many segments of the community which temporarily become irrelevant during a widespread disaster so that persons who normally are engaged in these non-essential tasks are free to provide assistance in the now more needed tasks. For example, in situations of widespread impact, educational institutions usually close. This means that school officials, teachers, maintenance personnel as well as students are available for volunteer help. The same is true of non-essential business offices and their personnel. In fact, a major problem in most disaster situations is the flood of volunteers who are ready and willing to help and the rather universal inability of organizations to utilize them effectively. In most cases, these volunteers are not "needed" since regular organizational personnel are available in depth.

Even in spite of the availability of regular personnel in critical emergency organizations as well as the potential availability of masses of volunteers, fear is often expressed in the planning literature as to the deleterious effect of conflict which many persons are assumed to face. This conflict is thought to be between emergency-relevant occupational responsibilities of the person and his obligations to his family. A classic hypothetical case would be the hospital administrator who is on duty when disaster impact occurs and he finds that his home and his family is in the impact area. Without knowledge of the safety of his family, he is assumed to opt to rush home and to abandon his hospital responsibilities. Such a situation as has been described could possibly occur, but in interviewing around 3,500 organizational personnel in about 100 disaster events and obtaining reports on the behavior of thousands of other workers, we have never found a case where a person abandoned an important emergency-related responsibility because of anxiety.

If a person is on the job in an emergency-relevant organization when disaster impact occurs, he is quite likely to be the recipient of more accurate information as to the nature and scope of impact so that he can make a determination of possible injury to family members. In addition, he is very likely to be able to obtain more detailed information about his family by staying on the job. For example, a police captain while continuing to maintain his responsibilities can call a patrol car across town to get general information about his area of residence or to gather specific information about his family. Or the captain may be able to do a quick check of his family in the course of his occupational obligations. The image that persons in a disaster area immediately abandon their emergency responsibilities to determine the safety of their families is simply not the case. In addition, depending on the timing of disaster impact, not all such "responsible" individuals are on the job when impact occurs. Those who are at home can make a quick determination of the safety of their family and then report to work. Such momentary delays do not hamper the initial functioning of emergency agencies and even long delays or even the loss of certain organizational personnel does not seriously affect organizational functioning since such groups generally have both available replacements and many volunteers.

We do not wish to imply that persons do not worry about the safety and welfare of their immediate families immediately after impact. Many of them do but that does not necessarily paralyze them. Too, many persons can make immediate assessment as to the likelihood of impact effect on those that are of concern to them. Even with the assessment of possible injury and in the absence of information to confirm or deny this, persons in responsible emergency roles still do not abandon them. Even if many did, there would be sufficient personnel to take over their responsibilities. Besides, there are many single, unattached persons within every community population. In every disaster situation, the number of persons affected, either directly or indirectly, is relatively small in proportion to those that are still able and available to help. The persistent notion that local organizations become ineffective because of the fear, anxiety and helplessness on the part of their members is simply not true.

4. The idea that disaster aftermath creates the conditions for the development of anti-social behavior is widespread. In particular, there is the assumption that widespread looting takes place. The term looting has military roots, implying that invading armies take property by force, generally when the rightful owner cannot protect it. During disasters, according to common belief, invading armies of opportunists take property left unguarded when the rightful owner is forced out by the disaster. Because of the expectation that looting will occur, one does find that there is, within disaster-impacted communities, anxiety about the possibilities of looting and also reports of looting which confirm the initial expectation. On the other hand, those who have done disaster research have found it difficult to cite many authenticated cases of actual looting. One study that did systematically inquire into actual cases of looting was the NORC study of White County, Arkansas after it was ravaged by a tornado in 1952. In the community that suffered the greatest damage, about 1,000 of the 1,200 residents were left homeless. A random sample of people from this town and adjacent impacted areas were asked whether they had lost any property by looting. Only 9 percent reported that they, or members of their immediate household, had lost property that they even <u>felt</u> had been taken by looters. And fully one-third of these people were

uncertain whether the loss was really due to looters, or whether the missing items had been blown away or buried in the debris. Finally, most of the articles were of little value.

In contrast, 58 percent of the people questioned said they had heard of others' property being stolen. In fact, 9 percent claimed that they had even seen looting in progress or had seen looters being arrested. The NORC study team on the scene, however, could verify the theft of only two major items -- a cash register and a piano.[16]

Other disaster research even outside the United States confirms the rarity of looting. A study made after the 1953 floods in the Netherlands found that, although there were many reports of looting, law enforcement agencies could not discover a single verified case. The Dutch researchers attributed many of the reports of looting to memory lapses in the immediate post-flood period, and pointed out that a number of people who reported thefts later found the missing items.[17] Charles Fritz and J. H. Mathewson, in a review of disaster studies published up to 1956, concluded that "the number of verified cases of actual looting in peacetime disasters, in the United States and in foreign countries, is small."[18]

More recent studies point in the same direction. We have studied around 100 different disaster situations and while we frequently encounter stories of looting, we have been able to find extremely few verified cases of looting. Actual police records support these findings. For example, in September 1965, the month Hurricane Betsy struck New Orleans, major crimes in the city fell 26.6 percent below the rate for the same month in the previous year. Burglaries reported to the police fell from 617 to 425. Thefts of over $50 dropped from 303 to 264, and those under $50 fell from 516 to 366.

In addition to reports about looting, other stories about various forms of exploitative behavior also are likely to be circulated. Stories of persons taking economic advantage of disaster victims by selling ice or food at inflated prices are often common during the emergency period. We would not deny that isolated examples of such behavior may occur any more than we would deny that similar forms of even more subtle economic exploitation occur every day in non-impact American communities. We would argue, however, that the function of these shared images of exploitation provide a reminder to those involved that such exploitation should not happen rather than an accurate account of what has happened. In fact, the most accurate description of behavior during the emergency period is a situation where "normal" anti-social behavior is greatly reduced and various forms of altruistic behavior greatly increased. Possessions are shared. Food, clothing, shelter is given to those who need them; labor is contributed. In many disasters, we continually find informal groups of persons who work for days together to help others, not just others they know, but simply others who need help.

In this connection, it is of interest that contrary to a widespread belief there has never been in the history of the United States the necessity to declare martial law in a disaster area. A seeming recent exception to this universal pattern was not actually so in fact. After Hurricane Camille in 1969, a "partial

martial law" was proclaimed for several southern Mississippi counties. However, the "proclamation" was so qualified and restricted and carried out in such a way that the military never superseded in any meaningful way, civilian control of the area and disaster-related activities. In fact, the proclamation seems to have arisen out of a misunderstanding between local community officials and state officials and was the source of considerable strain in their relationship in the post-hurricane period. Press reports of "martial law" in other disasters inevitably turn out to be completely false, or incorrect attributions regarding limited emergency power usually given by mayors or city councils to the local police. Typically the object of the executive order or city ordinance is to give the police more power to bar sightseers from disaster-stricken localities or to allow a pass system to be set up. In no way do such actions imply or involve any cessation to the regular civilian authority in the area.

5. Contrary to the popular image, morale in disaster-impacted communities is not destroyed. Partly as a result of the generation of altruism and the reaffirmation of equality just described, the result over time is an increase in collective morale. Such an increase may seem implausible since disasters create to a greater or lesser degree those who have immediate personal losses -- the death of a family member, injury to themselves or damage to their property. Victims, however, are always outnumbered by non-victims. Even in a community with a large number of "victims," their losses do not necessarily have a cumulative effect in lowering morale. Individual suffering is always experienced in reference to the plight of others. Suffering in the disaster context is not an isolated experience and, therefore, it does not become an isolating experience.

Even the victims have to judge themselves in terms of what happened to others. With only one exception, there are always others who are worse off. Too, the various deprivations within the community have not been caused by the victims themselves but have been "caused" by outside, somewhat random forces. So not only is each victim a small part of a larger community of sufferers but even their losses are likely to be seen as "good fortune" compared to what might have happened.

All of this is well illustrated in a random probability study made of victims in a series of tornadoes that hit four towns and the surrounding areas in northeast Arkansas. Victims compared themselves to what might have been, as well as what others had suffered. About three-fourths of the victims did not feel that in either relative or absolute terms that they had suffered great deprivation. Only 3 percent felt that the disaster was as bad as it could have been. Around 92 percent of the victims thought they suffered less deprivation than others; only 2 percent felt more deprived than others by personal and/or material losses. Comparable figures were found in all the areas including the most devastated small town where more than 80 percent of the population was homeless and where 35 persons were killed and about 400 injured.[19]

All of those who are affected by disasters have the chance to see that others around them do not differ much in their responses. That victims respond to their deprivations in a relatively similar fashion, regardless of their pre-disaster position in the community, is reassuring. In addition, the damage of disaster impact has produced physical consequences toward which individual and community actions can be directed. The problems which are created are immediate

and imperative -- rescue, debris clearance, helping shelter people, etc. -- and the actions necessary to solve them are apparent. Needs are obvious and the immediate solution clear enough that any action results in an immediate pay-off. Thus, disasters provide extensive opportunities for participation in activities which are for the good of the community. In one disaster, 43 percent of all the males in the impacted area searched for the missing and 21 percent engaged in rescue efforts in the six hours after tornado impact, and where there was evidence that at least 55 percent of this activity was not oriented solely to kin or intimates.[20]

Also, this kind of involvement and participation are carried out under conditions which give a person great latitude or choice in the determination of what and how things should be done. This is often in contrast to the restrictiveness and repetitiveness of the jobs of many of the persons in their pre-impact occupations. In the disaster context, the premium is placed on adaptation and innovation. And underlying these activities are a set of common values toward which individual and collective action can be directed. The possibilities for such direct action toward important values is in contrast to the ambiguity and even the meaningless of existence of many of the community members before impact. The efforts of each individual are easy to evaluate and, therefore, a person can see his own contribution to the "good" of the community. Community members, no matter how insignificant before, have become contributing members of the community with concrete positive accomplishments. In pre-disaster times, these are difficult to come by. It is not surprising therefore that one of the consequences of a disaster is, as the NORC study reported: "most of the changes perceived in other people were of a positive rather than negative nature."[21]

There also develops the feeling of participating in something unique and historic. Disasters are dramatic events in the life of any community. They become important in the collective memories of communities and become major reference points by which other events are compared and rated. Since disasters are such public events, those who have shared in them are brought together by their common experience. They now possess something that "outsiders" can never know and understand.

In fact, this heightened morale within the community has unanticipated consequences. It tends to condition the relationships between the "insiders," those members of the community who have shared the experience, and the "outsiders," those persons from outside the community who have come to help. This is reflected in part by the low and even negative evaluations which "outside" agencies often receive from the local inhabitants. Such negative evaluations have little relationship to the degree of efficiency or the scope of assistance which has been offered by these "outside" agencies. But many of these agencies come in with state, regional or national personnel who possess important skills but, since they have not shared in the community suffering, they are viewed as impersonal, unsympathetic, cold and insensitive to "local" problems and issues. In other words, morale has developed to such an extent that it not only supports and motivates the local inhabitants but it also creates a wall around them to exclude the outsiders, many of whom have relevant skills and resources which might be used. To the locals, it is "their" disaster and they do not want any outsiders coming in to take credit for "their" work during the emergency period.

Furthermore, the members of even a disaster-impacted community are seldom as bleak about the future as is sometimes projected on to them by outsiders. For them, their future and that of rebuilding their areas is often seen in more optimistic terms than they are given credit for in most cases. For example, tornado victims in two different Texas towns were asked how they felt about the future of their local neighborhoods after disasters hit those areas. In Waco, 52 percent of the victims thought their neighborhood would be better off in the long run and 74 percent said the same in San Angelo; only 2 percent said it would be worse off in Waco, and 10 percent in San Angelo. When asked about their cities as a whole, the residents were even more optimistic. Sixty-six percent of those in Waco said the city would be better off in the long run; only 3.4 percent said San Angelo would be worse off as a result of its tornado disaster.[22]

Not long ago, a small town in Iowa was struck by a tornado. Several days later, the local paper published a special edition which covered various aspects of the event. In addition to the general stories, it contained several columns of personal anecdotes of the event, several pages of pictures and advertisements from every business in town. The theme which pervaded the issue was summarized by the statement at the end of the major story: "[This town] is looking ahead. It has received perhaps the cruelest blow ever dealt an Iowa town in the way of a natural catastrophe. But it is far from being beaten. In fact, from the standpoint of becoming a finer community than ever, the future actually appears bright." Along the Gulf Coast after Hurricane Camille in 1969, the slogan "We shall rise again" was emblazoned on automobile bumper stickers, store windows and repeated over and over again in various mass media reports. Such optimism is usually attributed by persons in disaster-struck communities as being unique to that community and as a clear manifestation of "sterling" qualities of the local population. It is our observation, however, that the sterling qualities are not in any way unique, except that they may be uniquely human.

6. Patterns of leadership and of authority in disaster-impacted communities are very complex. Their complexity, however, is usually misinterpreted as confusion and the panacea of "strong leadership" is frequently offered as a solution without understanding the nature of the problem. Perhaps the beginning of understanding is to start with the observation that almost all communities are not organized to cope with disasters. This is true even in localities with extensive pre-disaster planning since there is a considerable difference in anticipating problems and facing them. What disasters do is to create a series of new problems for the community and in doing this, they necessitate new relationships among its parts. Disasters force the development of a new structure which reflects the current involvement of various parts of the community which, in turn, can make decisions "for" the community.

What happens in the early stages of a disaster emergency is that the pre-disaster community structure has to be modified in the face of new and complex problems for which this previous structure does not fit. New tasks are created by disaster impact which no existing local organization has as its responsibility. Therefore, new social forms have to be created and new relationships forged. The magnitude of these tasks necessitates "unusual" new arrangements between traditional community organizations, outside agencies, volunteers and many other groups not previously involved together in any pre-disaster situation. In addition, most of

these new tasks are created at roughly the same time so that activity is going on simultaneously in every area, not segmentally. At the same time, the accomplishment of some tasks is clearly dependent on the achievement of others, i.e., roads have to be cleared before persons can be taken to hospitals, etc. The pre-disaster pattern of community organization is not adequate to confront these problems since it was based on a different set of problems, less complex involvement, a more traditional division of labor, more segmentalized autonomous action and a leisurely pace in resolving conflicting claims. As a consequence, a new community structure has to be developed to cope with the new problems.

The key word here is "developed." It cannot be imposed, particularly by "outsiders" who have no previous community authority or even by insiders since what was the pre-disaster authority structure is now more diffuse and more widely shared among the various participating segments within the community. It is clearly impossible for any one person to collect and to monopolize such diffuse authority. Authority by definition has to be given to those who possess it by those who accept it. The scope and complexity of involvement in disaster undercuts the possibilities of centralizing authority to a much greater extent than these possibilities exist even in the pre-disaster patterns of American communities.

The interdependence of those who become involved does lead, however, to the emergence of a cooperative decision-making mechanism which facilitates cooperation among the many parts and which resolves conflicts which emerge. Such mechanisms look untidy to those who have an expectation for a neat model of bureaucratic efficiency or as undependable to those who have little faith in the capacity of members of a community to cope with adversity. What usually emerges is a very informal brokerage system among those who have a stake in disaster operations. Such a structure involves many different people -- municipal officials, representatives of private organizations, knowledgeable and involved persons, etc. In other words, it includes those who represent the various bases of authority which exist in fact within the community. The result is not chaos or confusion but a realistic outcome of the involvement and resources of many segments of the community coming together in the accomplishment of common tasks. The structure, therefore, reflects the social realities of the situation rather than an artificial creation based on unrealistic notions of "controlling and commanding" the situation. Authority has to be earned, not imposed, and those who wish to impose it will seldom earn it. It is earned by those whose performance shows that they deserve it and it seldom comes to those who just claim it.

As an illustration, in one major city which was struck by earthquake, coordination began to emerge as a result of the desire to pool information about the extent of damage and the status of emergency activities. After impact, each emergency organization with its own "intelligence" system began to accumulate indications of the problems they faced. The police department knew where their patrolmen were and what they were doing, as did the fire department, the public works department, the hospitals, etc. The mayor and other city officials through personal inspection tours had other types of information. Other persons initiated actions which they saw as necessary. A city employee and several of his friends obtained city maps and began to make systematic damage surveys. Members of a Mountain Rescue Group became involved with search-and-rescue operations along with members of the police and fire departments as well as many other "unofficial"

individuals. In effect, hundreds of individuals on their own and on various organizational requests began to take action of many types.

About midnight, the mayor through one of the local radio stations indicated that a meeting would be held at 3:00 a.m., some nine hours after impact, at which time the situation would be reviewed. At that time, a variety of persons assembled including city department heads, civil defense personnel, military personnel, public health officials, representatives of relief agencies, state and federal officials as well as many persons who were organizationally "unattached" but who had played important roles up to that point. In one sense it was an open meeting. The mayor began the meeting and explained that the civil defense director, who had just been appointed, would assist in recruiting personnel for various emergency programs. The mayor suggested what he considered to be several important priorities and then the meeting quickly moved into a format where persons would report on the damage as their organization saw it, report on actions already taken and report on current problems. Suggestions were made by the group for solving these problems, obtaining resources, etc. The meeting, in effect, functioned as the initiation of what was the "coordination" of emergency activities and, while many, if not most, of those attending had "official" positions, the group itself had no official or legal base. More importantly, however, it was representative of the current involvement of the community and, therefore, it could "speak" in the name of the community.

Earlier we indicated what many people think will happen in a disaster. In this later discussion we have shown what typically occurs. It is clear that the two pictures of such situations are not the same.

More Realistic Implications for Planning

Before our discussion of some of the actual behavioral patterns in disasters, we noted certain false planning assumptions that could be derived from misconceptions of disaster responses. After pointing out the inaccuracies of popular images, it is perhaps useful to suggest a more realistic set of implications for emergency planning. However, such implications cannot ignore the prevalence of the false images. The fact that the myths are so widespread and believed itself creates a set of problems which in certain ways is as important as the demands which are created by the disaster impact itself. Planning has to assume that the myths themselves have to be taken into account as one factor operative in emergencies.

Several suggestions can be made here, some of which are perhaps as applicable to disaster operations as they are to disaster pre-planning.

1. Information about dangers should be disseminated and not withheld because of a fear that people will panic.

Individuals can deal with the truth of certain dangers more adequately than they can deal with misinformation which is later contradicted by experience. Persons in areas threatened by disaster impact should be informed as to the realistic probabilities of impact. The major problem is not that people will

act irrationally on the basis of that information; a more important problem is to get them to act at all. It is difficult to convince persons of abstract threats. Thus, it is best to translate a general warning into a set of personal probabilities. For example, to say that winds will reach 85 miles per hour is meaningless unless the fact is known that an 85-mile-per-hour wind can blow trees down and roofs off. It is better to report that the water will reach the steps of the city hall or some other familiar location than to say that the flood stage will reach 59.9 feet.

Warnings should also be translated into personal alternatives for action. Given the probabilities of certain threats -- windows should be taped up; certain specific areas should be evacuated; particular evacuation routes should be taken; and certain kinds of assistance are available from clearly designated sources. If warnings are to become inputs for individual decision-making it is necessary that they be relatively concrete in specifying the nature of the threat as well as the protective actions that can be taken.

2. It should be assumed that persons in disaster-impacted areas actively respond to the emergency and will not wait for community officials to tell them what to do.

People are not immobilized by impact. They are "out there" -- working. In the emergency period they will be digging persons out of debris, hurrying others off to medical care, hunting for victims, getting temporary shelter and food, etc. What victims and nearby persons cannot do during the emergency period are those things that require specialized equipment or specially skilled personnel. Thus, the need is not to provide an immediate, indiscriminate across-the-board flood of aid, but rather to insure that certain selected items and people can always be readily located and mobilized. It is the rare natural disaster, for instance, that does not require earth moving and digging equipment and certain kinds of medical personnel such as surgeons. Thought has to be given also to the probabilities that there might be particular hazards in certain localities that might necessitate, say, specialists in burn cases or numerous boats for water transportation. Good pre-planning requires the making of inventories of key items and people likely to be needed and a specification of procedures for their quick location and mobilization at times of emergencies.

Roughly the same situation prevails in the relief and rehabilitation period as during the emergency period. That is, victims will not simply be waiting to be assisted -- they will be actively seeking housing, clothing and other supplies, jobs and sources of remuneration. In fact, one problem that more organized aspects of impacted communities have is to try to articulate their more considerable resources with the already on-going activities of individuals and small informal groups. Sometimes, victims are resentful of the "latecomers" who may imply that, before they arrived on the scene, nothing had been accomplished. It is best to assume that almost all persons in a disaster area are taking some initiative, with the problem being how to direct more organized efforts at rehabilitation so they will mesh with individual initiatives.

3. Local emergency-related organizations generally have enough people and are not rendered ineffective by loss of personnel.

Except in the unlikeliest of circumstances, almost all local organizations usually have more personnel than they can adequately use at any one time. One of their problems in disasters is to try to utilize regular personnel effectively in an unroutine, expanded, continuous operation. Organizations operating on a shift basis can handle this by lengthening shifts rather than putting two shifts on at the same time. Whether on a shift basis or not, it is important that some personnel and especially key officials get enough rest. Unless some prior thought is given to this matter, it can be easily overlooked during the emergency period, with consequent negative consequences for the efficiency of overall emergency operations. Officials who go without sleep for a great number of hours are often too tired to make proper judgements and decisions. Equally as important, because of their lengthy tours of duty, they are unfortunately also likely to become the sole sources of information about the disaster which really should be widely shared among other officials.

There are times when most emergency organizations will be the recipients of offers of assistance by local volunteers. However, because the quantity and quality of volunteer help is very problematical in any given disaster, it is wise for organizations not to make their possible availability an integral and central part of emergency planning. Even when they appear in large numbers, volunteers can be more trouble than they are worth, especially if there has not been effective pre-planning. It is necessary not only to clarify the nature of the work that volunteers could be assigned to, but equally as important it is vital that some regular organizational personnel be given definite responsibility for their use and control. In general, at times of emergencies regular staffs should do the specialized work of the organization, with persons from outside of the group being assigned if possible only to the most routine and standardized of tasks requiring little supervision or training. In all cases, planning needs to take into account the complicated legal and public relations problems the possible appearance of volunteers causes for emergency organizations.

4. While symbolic security measures have to be taken, massive deployment of security forces is unnecessary.

Looting and other anti-social behaviors are very rare in disaster situations.[23] However, because of the myths to the contrary, the presence of security forces is a symbolic necessity that cannot be ignored. However, this symbolic need can probably be met by the conspicuous posting of relatively few armed guards at certain strategic and visible locations, and by official announcements through the mass media that all necessary security measures are being taken, rather than through the massive deployment of security personnel all over the impacted area. The belief that security is necessary can be countered by creating the belief that security is being undertaken.

The usually available security personnel in an area can be used far more usefully in the important task of managing and controlling the convergence of men and materials on a disaster site. Traffic control is far more of a problem than security of an area. Persons who converge on an impact area have many different motives -- many are seeking friends and relatives, some are persons who live in the area and are returning, a few are just curious, others have come to help in any way they can; seldom are the convergers there for exploitative purposes.

However, their individual motives for converging does create a collective problem, and considerable attention in planning needs to be given to problems of keeping evacuation and supply routes open and operating.

5. Community morale is generally high immediately after a disaster, so the population does not need visits by important public officials to allay anxieties.

For a variety of reasons, persons in a disaster-stricken community tend to have a rather high morale. For those who need reassurance, friends and relatives are the best sources of support, and this will be operative regardless of public policy. In any case, official verbal reassurance is nowhere near as effective as concrete actions affecting general community functions. Quick restoration of public utilities, clearing of roads and debris, regular scheduling of bus service, reopening of stores, etc., will serve to maintain morale far more than vague statements from public officials about community spirit and the like. Planning should be directed at bringing about as quickly as possible as much normality of general community services and facilities as can be achieved, if the maintenance of high morale is desired.

Some local persons, including political officials, traditionally play integrative and reassuring roles within the pre-disaster structure of the community. To the extent anyone should play these roles after a disaster, it should also be the same persons. However, there is a need to recognize that persons from outside the community such as state legislators, governors, congressmen, senators, cabinet officers and even presidents sometimes feel their presence on the scene will contribute to local morale, although there is little evidence for such an idea. Pre-disaster planning should allocate personnel to serve as tour guides for such visitors because public relations and political considerations dictate they should not be barred from visiting a stricken area. Local officials who play reassuring roles might serve in this capacity rather than persons involved in key relief and rehabilitation activities.

6. Coordination is more crucial than strong leadership at times of disasters, but this should not be directed or controlled from outside the stricken area.

Disasters do not create total social chaos, superficial appearances sometimes to the contrary. Thus, there is no need for the imposition of strong controls or dictatorial directions. What is generally necessary instead is organization of all the various involved groups dealing with a range of different emergency problems. This requires the development of coordination among them. Such coordination is considerably facilitated if it has been somewhat pre-planned by local groups. One important element of such planning is the assignment of responsibility to some key emergency organization to call a meeting of all involved parties not more than several hours after impact. The purpose of the meeting is to share knowledge and intelligence about the consequences of the disaster, and to ascertain who is doing what and where in the emergency period. The calling of such a meeting should be done by some local group. Only serious conflicts and devisive problems are likely to result if there is an attempt to impose overall directions from outside a stricken community when there are any viable elements left in it after a disaster.

There are some disaster-generated needs that have to be responded to quickly and immediately such as search and rescue, emergency medical care, and the neutralizing of secondary threats (e.g., downed electric wires after a tornado or hurricane). But for most other requirements in relief and rehabilitation, immediate action is generally not necessary. In fact, it is more important in the early stages after impact to collect information as to what is needed than to attempt to start a massive flow of indiscriminate aid into the stricken community. Needs as to food, clothing, shelter, medical teams and mobile hospitals, especially, are usually lower than first believed and only fairly selected items are generally needed. Local direction of aid is crucial to insure that the help that is sent is what has been discovered to be needed rather than what outsiders assume should be required in a disaster. Good emergency planning requires attention be paid to developing ways to preventing unwanted and unneeded aid from arriving unsolicited and immediately in a stricken community.

In this rather lengthy discussion of common disaster images and their policy implications, it is important to underscore the fact that the myths are generally based on a low estimate of the capacity of man to adapt to adversity. By contrast, the research evidence seems to suggest the tremendous resilience of individuals, groups and communities under conditions of adversity and their rather amazing capacity to cope and innovate. By discounting these myths, we are not saying there are no major problems in disaster. There are some very serious ones for which emergency planning and organization is necessary. What we are saying is that what are commonly believed to be the major problems in disaster are often not the actual ones. Unfortunately, there are always people who sometimes think that vivid anecdotes about isolated cases of looting, personal disorganization, the failure of local officials, the breakdown of community emergency activities, the needed use of mass shelters, etc. provide the basis for planning. While such anecdotes may in fact be based on actual cases, they would only represent the atypical, the unlikely rather than the typical, expectable behavior. The typical, expectable behavior is the base on which planning has to be constructed.

FOOTNOTES

1. Harry Moore et al., Before the Wind: A Study of the Response to Hurricane Carla (Washington: National Academy of Sciences-National Research Council, Disaster Research Group Study No. 9, 1963), p. 36.

2. Arthur E. Prell, "Successive Hurricanes and Cultural Defenses in a New England City," Paper presented at the 1955 American Sociological Association meetings, pp. 5 and 11.

3. Thomas E. Drabek and Keith S. Boggs, "Families in Disaster: Reactions and Relatives," Journal of Marriage and the Family 30 (August 1968), p. 446; Moore, Hurricane Carla, p. 58.

4. H. Cantril, H. Gaudet, and H. Hertzog, The Invasion from Mars (Princeton, N.J.: Princeton University Press, 1940), pp. 57-59.

5. Charles Fritz and Eli Marks, "The NORC Studies of Human Behavior in Disaster," Journal of Social Issues 10 (1954), p. 39.

6. Irving Rosow, "Conflict of Authority in Natural Disasters," Ph.D. dissertation, Harvard University, 1955, p. 161.

7. Moore, Hurricane Carla, p. 92.

8. W. Stiles, "How a Community Met a Disaster: Yuba City Flood," Annals American Academy of Political and Social Science 309 (January 1957), p. 163.

9. William H. Form and Sigmund Nosow, Community in Disaster (New York: Harper, 1958), p. 117.

10. There are, however, some exceptions to this. For example, in Hurricane Carla around 200,000 persons of the over half a million evacuated went to the Red Cross and other shelters. See Moore, Hurricane Carla, pp. 2 and 89.

11. Fritz and Marks, "NORC Studies," p. 34.

12. F. L. Bates et al., The Social and Psychological Consequences of a Natural Disaster: A Longitudinal Study of Hurricane Audrey (Washington: National Academy of Sciences-National Research Council, Disaster Research Group Study No. 18, 1963), pp. 90-91.

13. Moore, Hurricane Carla, p. 128.

14. R. Gringer and J. Spiegel, Men Under Stress (Philadelphia: Blakiston, 1945), pp. 53-54.

15. Moore, Hurricane Carla, p. 92.

16. Eli Marks et al., Human Reactions in Disaster Situations (Chicago: National Opinion Research Center, 1954), I: 247-248.

17. J. E. Ellemers and H. M. Veld-Langeveld, "A Study of the Destruction of a Community," volume 3 of Studies in Holland Flood Disaster 1953 (Washington: National Academy of Sciences-National Research Council, Committee on Disaster Studies, 1955), pp. 111-112.

18. Charles E. Fritz and J. H. Mathewson, Convergence Behavior in Disasters: A Problem in Social Control (Washington: National Academy of Sciences-National Research Council, Disaster Research Group Study No. 9, 1957), p. 53.

19. Marks et al., Human Reactions, I: 481-483.

20. Marks et al., Human Reactions, I: 134.

21. Marks et al., Human Reactions, I: 207.

22. Harry Moore, Tornadoes Over Texas: A Study of Waco and San Angelo in Disaster (Austin: University of Texas Press, 1958), chapter 5.

23. E. L. Quarantelli and Russell R. Dynes, "Property Norms and Looting: Their Patterns in Community Crises," Phylon (1970): 168-182.

CHAPTER IV

COMMUNITY ORGANIZATION AND THE DISASTER CONTEXT

In an earlier chapter we discussed disaster agents and the consequences of the demands they make on impacted communities. In the last chapter, we concentrated on common misconceptions of disaster behavior and their implications for emergency planning. In this chapter, we turn to a series of observations about the differences between normal community activities and disaster situations and the importance of these differences for planning for emergencies.

We will first discuss a way of thinking about a community and the tasks that are normally carried on within it. This will be followed by an analysis of the impact disaster agents may have on community structure. Some attention is given to the tasks that have to be solved in emergencies and the need for coordination in that effort. We then consider the process of mobilization and reintegration necessary if the community is to be able to handle the new tasks. The chapter ends with a discussion of the changed conditions under which the community moves to deal with its disaster-generated problems.

In some respects the discussion in the following pages will be somewhat more abstract than in the previous pages. One reason for this is that we are trying to suggest certain very general phases or sequences in community response. Too much detail or too many concrete examples could take away the emphasis we want to place on the existence of particular common elements in different stages of community disaster response.

Also in what follows we are for purposes of discussion assuming a relatively major size disaster with some serious consequences for community functioning. Recent actual examples in American society of disasters of this magnitude would be the 1964 earthquake that hit Anchorage, Alaska, the 1965 hurricane that struck New Orleans, the 1966 tornado that swept through Topeka, Kansas, the 1969 floods in the north central states such as in Minot, North Dakota, etc. In all these cases the affected localities had to change their normal activities and attempt to deal with a major community crisis. We try to depict in what follows this pattern of response to an emergency in general and analytical terms rather than in particular and descriptive details.

The Pre-Disaster Community Context

While a variety of social units might be picked as a starting point in American society, the community -- a town, village, city, etc. -- has historically been very important as the locus for a system of human and social behavior. Any community occupies some physical space and has, in almost all

cases, legally defined territorial boundaries. To some extent such a social entity can also be characterized in terms of its terrain and climatic conditions (e.g., a mountain village or a hot, humid town). In addition, communities usually have names (e.g., Mt. Gilead, Ohio) and always involve some degree of permanent settlement (usually specified in population census figures). But these physical, legal and material features are only one dimension since communities are also very complex systems of human activity and social groupings.

It is initially useful to think of a community as a system that has evolved to meet needs or deal with problems. These needs generate a series of activities. The activities are usually carried on by a variety of groups. In their normal everyday operations these groups or organizations have developed routine ways of handling their tasks, handling their communications, assigning authority and otherwise functioning. These routine ways are in many respects the existing community structure. This structure requires little overall coordination. The structure instead is integrated as a result of habitual work patterns and traditional ways of allocating resources.

Any community has certain needs which must be fulfilled. People require adequate food, clothing and shelter; thus, there are demands for production, distribution and consumption activities as a part of daily living. There are activities directed toward the educational needs of the area. There are various types of formal and informal contacts which provide sources of participation in local community affairs. Since the residents of the area must go about their business with some degree of order, there are social control activities which help insure conformity to laws and other norms. There must be welfare activities to meet needs arising from individual and family troubles. These and other needs must be met if the community is to survive.

A key problem is one of allocating resources to needs. This usually takes place in the context of an organized division of labor. Groups and organizations engage in efforts relating to one or more of the various community needs. For any given organization within the community, the day-to-day operations is a problem-solving activity. Certain resources are needed, certain operations are performed, and certain outputs are produced. The community can therefore be seen as a multi-organizational system; i.e., it is made up of a number of economic, political, educational, religious, social and other groupings. This system is generally only a semi-autonomous unit in that it is never totally independent from its surrounding environment, often receiving necessary resources from the "outside." But by allocating resources from within as well as from without, the problem of meeting the needs of the community is solved.

From the viewpoint of the total community, there must be enough of an allocation of resources that allow the general needs to be more or less effectively met. Under normal circumstances, decisions regarding priorities of needs and allocation of resources tend to be dispersed through the community rather than centralized. In other words, there is no overall coordination at the "top" for everyday affairs. The integration and coordination of

community affairs is maintained instead because mutual expectations about priorities have been built up over time and the allocation of resources has become institutionalized.

To sum up: In normal times there is a range of needs in all communities. Activities are carried out by a number of organizations to meet these needs. But the decisions involved in carrying out these activities are not centralized. Instead coordination is the result of work habit and a traditional allocation of resources. As we shall see, there are both similarities and differences at the time of a disaster. During emergencies there are both needs and organizations, thus not differing from the everyday situation. The major difference in disasters is that overall coordination is necessary and it has to be developed as the crisis develops.

The Impact of Disaster Agents on Community Structure

To understand the impact of disaster agents on the structure, it is perhaps best to start with a common paradox. As we indicated in the last chapter, rather high morale develops in disaster-stricken communities. Community cohesion tends to be high. On the other hand, mass media reports usually emphasize the dramatic disorganizing effects of a disaster agent. Communities are pictured as being somewhat disorganized.

Some of this reporting as we have noted, stems from misreporting and prevalent myths about disaster behavior. But the perception of seeming "disorganization" alongside community cohesion is not altogether incorrect if it is recognized that what is involved is the dual aspect of the process of adaptation a community experiences in coping with disaster. This adaptation is necessary since communities in their daily existence are not structured to cope with disaster. This is true even in those communities with previous experience and with prior planning. Consequently, a community has to become "disorganized" before it can develop a new structure capable of coping with the new and often overwhelming demands made upon it. This "disorganization" is a natural process, even though unanticipated, and it is only indirectly related to the unnatural disaster event itself. As a result of the development of a new structure capable of coping with the event, the community experiences a new integration. These paradoxical consequences are, in large part, created by the changes necessary in the relationships within and among community organizations as they become involved in the emergency period.

To understand this paradox, we will first look at the consequences of the disaster event itself for organizational functioning. Second, we shall see that the tasks created by the disaster event necessitate the development of subsystems within the community attempting to cope with them. Third, we will note that the proliferation of these coping systems leads to problems of coordination. Finally, the process of mobilization will be described detailing how the community comes to control sufficient resources to cope with the problems created. This process results in a new integration.

1. The Disaster Event.

One of the major consequences of any disaster event is, of course, the creation of realistic tasks for community organizations to solve. People are injured. Houses and other buildings are destroyed. People have to be evacuated, then housed and fed. Utilities have to be restored. Fires have to be put out. Roads have to be repaired. Many of these tasks do become activities of specific organizations since they are part of the organization's predisaster understanding of responsibility. Other organizations, however, also become involved as a result of their broad mandate to "help the community." As a result of impact then, tasks are created and extensive organizational involvement is evoked.

Immediately after impact and early in the emergency period, the nature of the tasks and the scope of organizational involvement are unknown, unclear and/or confused. In spite of this uncertainty, there is, however, a great urgency to act. This has several organizational consequences. One common response for organizations is to allocate resources to immediate and visible problems, which may not be part of their subsequent responsibility. Another response is to mobilize added resources, including manpower, in anticipation of increased tasks. Such actions change the pattern of tasks; modify previously established patterns of decision-making, authority relationships, and communications channels; and create new organizational boundaries. In addition to creating internal changes, the scope of the tasks and the uncertainty of them leads organizations to become involved with other organizations with which they have been previously unfamiliar.

2. The Creation of Task Subsystems.

One way to see the next phase in the process is to observe the creation of many different task subsystems. Several different organizations become involved in the same or related tasks. For example, the search of an impacted area and the rescue of victims will involve many different organizations as well as hundreds of "unorganized" individuals. As we said earlier, much of the initial rescue work will be done by individuals already in the impact area and its fringes. In addition to these initial individual actions, members of the police and fire departments are also likely to become involved as are employees of private ambulance companies, hospital workers, utility workers, other municipal employees, heavy construction work teams from private contractors, military units, and so on. The vast majority of these individuals and organizational members work together for the first time. Procedures and responsibilities have to be worked out since they have not been predetermined. Initially, then, one can observe diverse and somewhat independent actions of equally diverse and previously unrelated segments of the community. In time, the actions become more systematic as knowledge of the tasks increases and as familiarity develops with the involvement of other members of the system. What emerges then, are patterns of interaction among the members of the developing subsystem.

3. The Coordination of Various Task Subsystems.

As task subsystems develop and become somewhat routinized, a new set of problems is created: the coordination and articulation of these systems into some overall pattern of activity. This is often made difficult by a number of factors. One complicating factor is that the accomplishment of certain tasks may be dependent upon the achievement of others. For example, getting an ambulance to an injured person may be dependent upon clearing and repairing the street which gives access. Also, when the injured person arrives at a hospital, various utilities may have to be restored before treatment can be given. This is what is called sequential interdependence. Consequently, some scheme of rough priorities has to be established. This is difficult since each organization tends to consider what it is doing as being critically important. What is needed then is, in effect, some overall view of the tasks and their relative priority.

The mechanisms to achieve this overall view are seldom available in the existing community structure. The traditional method of pluralistic decision-making, involving the conflicting interests of diverse groups and organizations, works too slowly and chaotically for the situation at hand and for the feeling of urgency which permeates community organizations.

A new pattern of decision-making does develop. In effect, a structure has to be developed which represents the community. Who represents the community is not an easy question to answer. Is it the political structure and the elected officials? Or is it those persons and organizations who have the most knowledge, are the most involved, and/or have the greatest resources? Are there traditions from earlier experience which provide guidelines? Are there legal definitions which support or contradict these traditional guidelines?

In the development of coordination, the organizations which become involved possess different degrees of legitimacy. The notion of legitimacy implies that an organization is accepted by a community as being a valid institutional form for carrying out a course of action. For example, the fire department is seen as the legitimate form to fight fires. The Salvation Army is not. Different degrees of legitimacy complicate the development of coordination. In general, organizations new to the various task subsystems and involved in new tasks lack the same degree of legitimacy as those having a predisaster history of involvement and predetermined responsibility. Questions of legitimacy are also raised when national organizations claim certain responsibilities without a previous history of involvement. When issues of jurisdiction, power, and authority are raised in the course of the development of coordination, they usually are resolved on the basis of legitimacy.

Coordination does develop over time. In part, it is a by-product of the search for information. Organizations seek information which will allow them to cope more effectively with their tasks. Since the collection of information is not a responsibility of any one organization within the community and since each organization has a different vantage point from which to view the consequences of impact, efforts are made to seek information and, in exchange, to give information. This process generally leads to the development of a meeting of those who have information

and those who seek information. As the definition of the situation becomes somewhat standardized, those who have been involved in this process have become in effect a coordinating body for the community. Such a group is usually composed of officials of legitimate organizations plus individuals with special competence and knowledge, and individuals who participate in many different institutional segments of the community. What has developed then is a new temporary structure which encompasses those currently involved in the tasks and, therefore, those who constitute the "community." During its relatively short life span, it provides the focus for resolving jurisdictional disputes, assigning tasks, and determining priorities. The composition seldom fits neatly with the predisaster patterns of community organization or with the images of coordination which are often specified in planning.

What has just been described is usually evaluated as being disorganization. The creation of new tasks makes previous experience somewhat irrelevant and prior routines unworkable. New involvements make prior contacts outmoded and the more inclusive involvement in the task subsystems means the creation of new structures. The integration of the many different task subsystems into an overall pattern of activity necessitates the development of an encompassing community view and structure which is not easily achieved utilizing the predisaster community organization. In this sense, the older, now dysfunctional patterns have been dropped, modified, or adapted in terms of the realities of the new situation. Since these older patterns, by definition, are familiar and comfortable, their lack of utility in the postdisaster situation is discomforting, at least temporarily, for some community participants. In a psychological sense, abandoning the older patterns may be temporarily disorganizing.

The Process of Mobilization and Reintegration

Giving up the old, however, is accompanied by the creation of the new. The development of the new is perhaps best conceptualized by what is called mobilization. Mobilization is the process in which a social unit gains, relatively rapidly, resources it previously did not control. Utilizing the concept in this context, the social unit -- the community -- gains resources it previously did not control. As a unit is able to control more resources, it increases its ability to act collectively. The restructuring of the community during the process of mobilization may seem disorganizing but it is necessary for the ability of the community to achieve the tasks created by the disaster event.

Prior to the disaster event, resources are spread out throughout the community. In American society in particular, many of these resources reside in individual and family units. Other, larger units within the community possess other resources. They are, in addition, resources potentially available outside the immediate community system, in other communities, and in state and national systems. These resources, then, have to be reallocated to the community unit and utilized in the urgent tasks created by the disaster event. This reallocation process can be seen in shifts in control of three types of resources: (1) manpower, (2) economic, and (3) loyalties.

1. Manpower resources. The reallocation of manpower is achieved in a variety of ways. Organizations which operate on the basis of shifts recall all of

their workers and can double to triple their manpower potential. Certain traditional tasks are ignored and the personnel normally assigned to these tasks can be utilized elsewhere. The time spent in work is lengthened to where it becomes a mark of status to have been on duty 18, 24, 36, or 48 hours, although we have earlier pointed out the problem of loss of efficiency in such activity.

Most organizations which become involved also depend in different degrees on volunteers. Some, such as the police, utilize them only somewhat tangentially, but others, such as the Red Cross, are composed primarily of volunteer help. In addition, some organizations that become involved are exclusively volunteer -- ham radio groups, church groups running shelter. These volunteers are drawn from the vast manpower potential which every community maintains. Unemployed persons such as the retired and teen-agers, "underemployed" persons such as housewives without young children, family members of employees -- all become part of emergency activity. Additional manpower is released for use in the community emergency since organizations with no role in the emergency usually suspend operations. This releases their personnel for reassignment to more critical tasks in the community. In a widespread emergency, few profit-oriented organizations play key roles, so most business not related to immediate needs of food, shelter, clothing, or medical supplies close down. In addition, other tasks, such as education, have low priority, so school personnel and other resources normally used for education can be converted temporarily to emergency use.

This reallocation of time and energy from private to public community efforts has been called elsewhere "the expansion of the citizenship role." This formulation suggests that the normal requirements as well as the possible opportunities of citizenship are somewhat minimal for community members most of the time. However, an emergency provides the opportunity, the motivation, and the structural conditions whereby widespread participation is possible.

In addition to the manpower potential within the community, there are also increased possibilities of utilizing manpower from outside the community system. Local organizations with state, regional, and national ties often request or are provided additional help. In many instances, military personnel can be made available to take over certain community tasks or to supplement existing community efforts. These manpower reserves allow the community system to increase drastically its capacity to accomplish emergency tasks.

2. Economic resources. The mobilization of economic resources can be seen in two different ways. First there is the objective fact of the convergence of goods and materials on a disaster area. A number of studies have indicated the existence of a deluge of supplies which flood into a disaster area. These goods are a consequence of spontaneous and organized generosity from within and from outside the community. These goods can be seen in the context of the voluntary transfer of the economic resources from individual control to community control. Food, clothing, and other emergency supplies come under the control of existing community agencies, or new organizations are created to distribute them according to the new pattern of needs.

Second, there is an interesting shift in the definition of property in the emergency period. Property has reference here not to any concrete thing or material object, but to a right. In other words, property is a shared

understanding about who can do what with the valued resources within a community. Such understandings are widely shared in predisaster conditions. They are codified into legal norms which specify the legitimate forms of use, control, and disposal of economically valued resources within the community. Such expectations change dramatically during the emergency period. There quickly develops a consensus that all private property rights are temporarily suspended for the common good. In this sense, all goods become community property and can be used as needed for the general welfare. Thus, warehouses can be broken into without the owner's permission to obtain generators necessary to keep hospitals functioning, and the act is seen as legitimate if undertaken for this purpose. Under the previous norms, this would be technically an act of burglary, but at the time of the emergency, any attempt to define such actions in this way would tend to be rejected by public officials and law enforcement officials as well as by the general public. In addition, there are powerful pressures against the use of goods for purely personal use while major community emergency needs still exist. In a way, the individual who uses anything for himself alone is seen as "stealing" from the common store. This rather dramatic shift in the definition of property rights during the emergency period helps explain another paradox of natural disasters. During the emergency period, there is great preoccupation with the possibility of looting but little or no actual looting. Reports are often widespread but there is little evidence of extensive looting, as we indicated in the previous chapter.

The important point in this context is that the redefinition of property rights which occurs during the emergency period makes, in effect, all property, regardless of its previous definition, community property for the emergency period. There is the implicit notion that the community has first claim on the use of resources. Only until it is clear that certain items are not needed can they be "released" back to individual and private control. The net effect of this temporary redefinition is to make available to the community practically all of available economic resources, including those which were under private control in the previous definition of rights. In effect, then, the community can mobilize under its control vast economic resources, and this in turn increases its ability to act.

3. Mobilization of loyalties. Another less obvious but highly important aspect of mobilization is the shift of loyalties from smaller subunits within the community to the community itself. The very existence of community life, of course, requires some extension of loyalties beyond the family or peer group. But the integration of a community is affected by the degree to which members identify with the large units as against the degree to which they identify with subgroups. This transfer of loyalties is facilitated by involvement and participation in a major community problem as well as being consciously manipulated by community leaders.

One indication of the extensive mobilization of loyalties which occurs is seen in what has been called the development of an emergency consensus. If one considers that the predisaster community is characterized by the pursuit of diverse and predominantly private ends, in the emergency period, there is a shift toward common and essentially communal ends. In this context, this development of functional priorities indicates the emergence of an emergency consensus in which personal goals have to be subjugated or temporarily suspended until the "common good" is achieved.

Other indications of this mobilization process can be seen in the following ways. One is certainly the extensive participation which develops in emergency actions. This is done voluntarily, and those individuals who participate expend time and energy which would be otherwise considered unthinkable. This expenditure of energy seemingly is sustained by some notion of loyalty to the community. Second, those who participate generally comment on the decrease in the importance of previous social distinctions. Status, ethnic, and racial distinctions are minimized, and a rather universal comment is "how well everyone worked together." Third, the transfer of loyalties to the community is accompanied by a hostility to outsiders. This change can be problematic for those national organizations which come to help. In particular those who claim positions of importance in the emergency system and those who come in after the event has occurred are likely to be treated as outsiders. Regardless of their motives, those who do not seem to share the community of suffering and work are treated as strangers or visitors.

The net effect of the mobilization of these loyalties is the creation of an esprit de corps among the vast majority of community members. As we indicated earlier, various types of mythologies develop to explain this; e.g., it is a revival of the pioneer spirit, or this is what one should expect of Texans or Alaskans, and so on. In turn, the event itself assumes symbolic importance. It is often talked about as being a high point in community life, much like the good old days. The event itself often becomes a turning point in community history; e.g., such and such event happened before the flood.

This, then, is the integrative part of the process. The community is able in a relatively short period of time to mobilize manpower, economic resources, and loyalties. The community as a unit is able to gain control of these resources. Such mobilization provides an answer to the question of where the energy of social units comes from. Every predisaster community is characterized by relatively low mobilization and, of course, the full potential for mobilization in any community is never completely realized. But even minor changes in the level of mobilization within a community can result in a tremendously increased capacity to achieve tasks which would be impossible at usual levels of mobilization.

One note should be made here in reference to planning. Much traditional disaster planning takes the disorganizing aspects as its point of departure and attempts to achieve greater rationality and control of the anticipated situation. It is possible to argue, as has been done here, that the disorganizing aspects are necessary in order to develop the mobilization necessary to cope with the tasks at hand. In fact, rather than accepting the usual assertion about irrational, inefficient behavior in disasters, this would argue that the end result is more rational and, in time, more efficient since a community has restructured itself to meet a set of problems which the previous organization could not. Disaster planning should be made in the context of these natural processes which a disaster event sets off, and it should facilitate these processes, not impose an impossible model of human and technological efficiency which has little relationship to reality.

Changed Conditions for Operations in Disaster

In the previous sections. we have already alluded to certain differences between the "normal" community and its operations in disasters. Perhaps it is necessary to emphasize again some of the differences since they cut across many different aspects of community structure.

1. Uncertainty.

Since a disaster agent is a new "input" into a community environment and since it is dangerous and destructive, its impact creates an element of uncertainty. While organizations within a community always deal with some degree of uncertainty in their day-to-day operations, the problem in emergencies becomes more acute. Initially, organizations will not know the magnitude of the emergency demands that will be made on them. It will be unclear as to what human and material resources will be needed, how they will be acquired and how they will be distributed. This uncertainty will be aggravated since others on which they routinely depend are also characterized by uncertainty. This is why the initial assessment of damage impact and the pooling of information in the early stages of the emergency period is so critical, and why planning should be directed to such activities.

2. Urgency.

Even if there is a high degree of uncertainty, there is also a great urgency to act. When there are lives, human suffering and property damage at stake, there is a tendency to become involved in immediate problems. These problems in the long run are less important and may be trivial in terms of the tasks which are needed much more but are not as obvious. Only planning can call attention to less obvious problems.

3. The Development of an Emergency Consensus.

In most communities which are affected by widespread disaster impact, there is an interesting process whereby a set of value priorities for the community develops. In other words, there develops somewhat spontaneously the collective idea that certain things are more important than others. At the center of this, of course, is care for victims. This includes rescue activities, medical attention, and food shelter and clothing for those in the impact area. Those involved in planning and coordination can often help crystalize this set of community priorities. In addition, there is also value in moving away from them if they are no longer needed, and to move back to the diversity which has characterized the predisaster community. In other words, there is some value in getting back to normal as soon as possible. Because of these value priorities, many sections of the community "close" down -- schools, movies, normal recreational activity, club meetings, etc. There is certain value in reestablishing normalcy as soon as possible. It is somewhat like the process of bereavement. It is all right to mourn for an appropriate period of time, but the best therapy is to move back to routine activities.

4. Expansion of the Citizenship Role.

We have already commented on this in several places. Disaster seems to evoke a great deal of community solidarity and mutual helpfulness within communities. Rather than being characterized by anti-social behavior, people want to help. The important point for planning here is the notion that the major problem will not be the lack of personnel to help but, in general, the excess of people who want to help. A major part of planning should be centered on how to utilize effectively the skills that will be offered. Or if volunteers cannot be used, plans should be made insuring they will not be hindrances in the carrying out of necessary tasks.

5. Convergence.

A wide variety of motives is involved in what is called convergence, as we have already noted. Rather than fleeing from the impact area, studies have generally shown that there is a "mass assault" of people on the disaster area following impact. Some are members of the families and friends of those in the area. Some are those who want to help. Others are simply curious. This convergence offers both an opportunity and a potential problem. It is an opportunity because they present a large pool of volunteers who are available for use in a variety of various disaster tasks. They are a problem in the sense that they constitute a large "mass" of people without assignment who can disrupt organized efforts by blocking access routes, etc. The degree to which they can be utilized effectively is dependent on planning but it is clear that they should not be treated as potential threats; i.e., as looters, etc., as they sometimes are by security forces.

6. Deemphasis of Contractual and Impersonal Relationships.

While impersonal relationships characterize much of contemporary society and formalized rules guide much activity, the prevailing mood in the emergency period is one of friendliness, and lack of attention to formalized rules. A complex, legalistic disaster plan would probably be ignored. Some disaster planners feel threatened when people do not follow their plan. Disaster is often the time to innovate and to do "things" differently. This is often why morale increases. There is not time for formalized procedure since the important thing in terms of the emergency consensus is to get the job done. Such types of behavior are often very threatening to persons who "think" totally in terms of formal rules and who think they can exercise full "command and control" of a situation. The more interesting thing is that emergency tasks often get accomplished in spite of a lack of formal rules. This characteristic of relationships within a disaster-impacted community presents a problem for those who represent legal and bureaucratic agencies outside the community. Their insistence on formalized rules will be resented by "insiders." There is perhaps no "solution" to the problem except to try to understand it.

These, then, are some of the changed conditions which affect disaster operations. There is, however, one other element of community structure which has not been given enough attention in previous sections and so, here, we will provide a final note on the family.

A Note on the Family

Disaster planning has both assumed too much as well as too little insofar as the family involvement in disasters is concerned. On the one hand, planners have often overplayed its importance, worrying that persons become so anxious about the safety of their family that they will abandon more general community responsibilities. On the other hand, emergency planning at times seems to work with an unwarranted image of communities as if they were only made up of isolated individuals. But as indicated earlier, officials do not abandon their organizational roles. But neither are most communities populated by solitary persons; i.e., individuals without social ties, especially of a close nature, to a number of other people in the general locality.

It is perhaps unnecessary to note that in disasters there is a desire on the part of family members to be together. Members of disaster-activated organizations, often realizing that they cannot be with family members, nevertheless are interested in determining the safety of separated family members as well as making arrangement for them if they are endangered or have disaster-occasioned needs. Usually such determination and arrangements are made through and with other family members or neighbors. There should be planning ahead of time to facilitate establishing contact with other family members and insuring that family members are in safe locations. Announcements that tell people "not to use the phone" are generally ignored. It is probably easier for disaster officials to help in getting messages through to separated family members than to expect the rest of the community to change their behavior. In addition, it would seem that some sort of information center could be established to facilitate family unification.

Planning should also not ignore the potentially important role of the family in a wide variety of community disaster tasks. We illustrate this in two areas, warning and evacuation. But it could be seen in practically any of the community tasks we have been discussing in this chapter.

Families play a part in the receipt of warning messages, and an important role in their confirmation. For example, in a study made in Denver, while the initial warning of an unexpected flood was received by 52 percent through mass media reports, 28 percent of the sample got their initial warning from relatives and friends, while only 19 percent obtained their warnings directly from the authorities. As we have already observed, in this situation, as in most others, initial warnings are treated with some skepticism. In attempts to confirm the initial warning, immediate family members and other kin play an important role. These sources were especially important in encouraging families to evacuate. In other words, messages -- phones or other types -- from friends and relatives were more influential in getting families to evacuate than were messages from mass media sources. These same friends and relatives provided transportation for 17 percent of the families who evacuated. This assistance, however, was not provided until some form of contact was made between these parties, usually via a telephone. In addition, when the families evacuated, 42 percent went to homes of relatives while only

3.5 percent of the families went to official shelters. As this example illustrates, the family -- both the immediate family and the kin group -- is an extremely important group in disaster planning, since to the extent that the family can handle the problem, other community resources need not be allocated.[1]

Since much of the behavior which is "necessary" for communities to be adaptive to disasters occurs in a family context, it is imperative that disaster planners try to understand the demands as family members see them, and then try to fit this into a more comprehensive community plan. Disaster planners by definition are concerned with community-wide needs and community-wide problems. On the other hand, most people who are the major components in such plans have a rather "narrow" everyday perspective -- concern with self, family members and immediate neighbors. To expect them to change this perspective, especially at a time of disaster in any drastic way, is fantasy rather than planning.

CHAPTER V

THE ELEMENTS OF ORGANIZED RESPONSE IN DISASTERS

In the last chapter we considered some of the differences in context and conditions between everyday community activities and disaster situations. In this chapter we propose a way of thinking about the latter, that is, community response in major emergencies. Thus, what follows is primarily analytical rather than descriptive.

First, the basic elements of any organized disaster response are set forth. We indicate the usefulness of distinguishing between the concepts of domain, tasks, activities, and human and material resources. Second, we spell out essentially four different types of organized response that can be seen in major catastrophes. These take the form of established, expanding and extending organizations and/or emergent groups. We conclude with an attempt to show that the key to an effective response, both at the organizational and community levels, is an integration of the basic elements in all of the types of organized response. Disaster planning, if it is to be effective, must aim at that kind of integration.

The Basic Elements

It is possible to divide up the basic elements of any organized disaster response in a number of different ways. One way that appears useful to us is to think along the following lines. As indicated earlier, there are disaster demands, some agent-generated, others response-generated. If so, a key question would appear to be what organization should have the responsibility for particular demands? We suggest that this can be thought of in terms of organizational domain. A related question is what influences organizational domain? As shall be seen, part of our answer is that it partly depends on the community values involved.

Given certain domains, there are particular tasks that have to be undertaken. For example, if the organizational domain or responsibility is to "feed victims," different tasks such as the acquisition, the preparation and the dispersal of food will be necessary. There are always multiple tasks required for any one given domain or responsibility. Thus, in the analysis of community emergencies, there is always the question, "What are the necessary tasks?"

The actual carrying out or implementation of tasks on the basis of domain involves activities. There is a basic distinction between tasks and activities. Tasks are definitions of what should or must be done if an organizational domain is to be reached; activities are what are actually done in the situation. Consequently, activities can be used as a basis of evaluation of task achievement. Or putting it into question form, what should disaster planners use to evaluate activities that are carried out?

Finally, organized responses in community emergencies cannot be undertaken without human and material resources. Human resources are the skills people have and the information they know which can be brought to bear in carrying out activities. The material resources involve those physical means and facilities necessary for the achievement of tasks. In question form, "Can we ask what resources are needed to adapt to and respond to a community emergency?"

In the pages that follow, we consider in more specific detail each of the four basic elements involved in any kind of organized disaster response; that is, domains, tasks, activities, and human and material resources.

1. Organizational Domain

Our initial concept, that of domain, is probably an unfamiliar one to most readers. We use this term not to introduce a jargonistic label, but because we feel that it captures an element in organized disaster responses that often is either overlooked or confused with other elements. In other words, the notion of domain calls attention to something that is important to recognize for planning purposes.

Domain specifies which of the disaster-generated demands are the responsibility of an organization. Thus, definitions of domain outline the general focus of attention of the group involved. This allows an organization to focus its response efforts on certain aspects of the situation and to ignore others.

For instance, the domain of a hospital is usually to "save lives" or that of a city water department may be "to restore the water service." The definition of domain in these cases clearly stems from the pre-disaster community responsibilities of the organizations. However, definitions of organizational domain may also be a consequence of formal disaster plans. For example, the disaster domain of many local civil defense offices according to the emergency plan of the local community is to "coordinate community response" (a response rather than disaster agent-generated demand). It is also possible for a group domain to be neither a consequence of the pre-disaster situation nor a result of the activation of emergency plans. This would be true, for instance, of spontaneously emergent "search and rescue" teams after a disaster. In addition, it is possible in some disasters for some organizations to assume entirely unanticipated domains. Thus, construction companies may redefine their goals to assume disaster-related debris-clearance responsibilities. Overall, it should be one of the functions of planning to anticipate and to assign domains to different groups and organizations.

There are certain values which underlie organizational domains. Very often these values are unstated, left implicit. For example, rescue groups are involved in saving lives. But it is not necessary in American society as it might be in other societies to state that lives should be saved. When a fire department puts out fires, it does not need to explain that the destruction of buildings by fire is undesirable. Nevertheless, these implicit values are important in determining the nature of organized disaster responses.

The priority of values among various groups differs in disaster situations. Organizations which have domains involving high priorities will be seen by those

in disasters as having very urgent responsibilities. These organizations will almost without question continue to function during the emergency. They will very likely be rather single-minded in their pursuit of the most effective response to preserve high priority values. Low priority activities will be slighted or even abandoned. For example, during disasters hospitals set aside normal concerns such as assessing the ability of patients to pay, recording their names and other details, receiving permission from next of kin, and so forth. The high priority value of treating injured victims is all that seems important in the disaster context. Similarly, police and fire departments set aside some of their everyday responsibilities such as giving traffic tickets or conducting fire inspections, and concentrate heavily on their emergency domains.

In contrast, organizations whose everyday activities are of relatively low priority insofar as disasters are concerned, tend to cease operations. Thus, organizations focused on profit making or entertainment shut down during the emergency period. Manufacturing plants and department stores, restaurants and bars, night clubs and theaters are likely to close down even if they have not had any physical damage and their work force is available. Sometimes this may create some difficulties in disaster response. For example, closed department stores and restaurants could supply useful resources for active organizations. Perhaps more important, until the majority of such organizations are reopened and functioning, it is difficult for the community to develop a sense of normalcy. There is, in fact, a case to be made for restoration of normal organizational activity as quickly as possible after a disaster impact.

Other organizations continue to operate in the emergency phase, but only after changing their definitions of domain to some objectives of higher priority. This shift in domain may be formally planned or simply emerge. There are various examples of planned shifts in domain during disaster. Local civil defense agencies often plan shifts from everyday concerns with nuclear warfare planning to a focus on disaster coordination. Similarly, Red Cross and Salvation Army units set aside some of their normal routines and assume emergency responsibilities. In a way, such kinds of groups might be said to have latent emergency responsibilities that surface or come to the fore at times of disaster.

When high priority demands appear to be neglected during the emergency, organizations with no pre-planned disaster domain may step in to fill the gap. Construction companies, either by request or at their own initiative, often clear debris from streets. Church groups frequently provide men and equipment to meet a variety of disaster demands which were never a part of the organization's implicit or explicit responsibility. School personnel sometime set up evacuation centers in their own buildings.

Also, when previously unorganized individuals perceive that some disaster demand is not being fulfilled, they may organize themselves into a new group to meet it. Sometimes these unofficial groups acquire a name and a widely recognized identity as part of the community's organized response. In other cases, new or emergent groups may exist but be less obvious. They may not be named or widely identified as a group, but still perform in an organized way. For example, initially independent and uncoordinated search-and-rescue attempts by several individuals may evolve into a joint and integrated team effort.

Thus, there is a whole range of organizational domains. On the one hand, there are those organizations that have everyday emergency if not disaster responsibilities such as police departments and hospitals. There are also those groups who have latent emergency responsibilities such as the Salvation Army. Then there are those organizations who normally have no disaster domain but who assume some during an emergency, such as a school system. Finally, if no pre-crisis organizations exist that can or will take over some disaster-generated demand, people may band together and a new group could emerge to handle such a responsibility as that of ascertaining and locating and bringing together missing persons.

2. Tasks

In attempting to deal with any domain, usually a series of tasks is involved. Organizational tasks are definitions of how the specified domain of an organization is to be accomplished. For example, if a group has the responsibility of feeding disaster victims, attention must somehow be given to the various tasks of acquiring, preparing, and dispensing food where it is needed. There are almost always multiple tasks necessary if a domain is to be met. Furthermore, these tasks must be related to one another. Thus, planning for organizational tasks must not only distinguish tasks from domain, but recognize the multiple nature of tasks and the need to link them together if there is to be an effective and efficient organized response. It is not enough to know that the means to achieve goals have to be spelled out; it is also necessary that the numerous means be tied together to meet the organization's responsibility.

Depending upon definitions of domain, organizations will assume responsibility for meeting a set of disaster-generated demands. There will be less problem in identifying important things to do if normal routines included the related tasks to be performed, or if pre-planning has anticipated the needed tasks. Then it is simply a question of continuing usual tasks or carrying out those specified by a plan. However, in some cases new tasks have to be defined as the crisis develops. For example, what are all the steps or means necessary to clear a radioactive contaminated neighborhood as a result of a power plant explosion, or how is pure water to be obtained, transported and distributed in a flooded area? While assignment of organizational responsibility is relatively easy to do, it is sometimes difficult to anticipate all the necessary tasks that will have to be done to meet particular disaster-generated demands.

Even when necessary tasks are specified, there is still the problem of interrelating them. In some cases not only are there multiple tasks, but different organizations may be involved. Disaster response sometimes necessitates many interrelated tasks carried out by different organizations. Debris clearance and leveling, for example, may require prior search and rescue efforts for buried victims, inspection and condemnation of buildings, blocking of streets to spectators and passersby, passage of emergency ordinances, and the obtaining of written permissions to use certain places as dump areas -- in short, many interrelated tasks possibly involving formal organizations such as the police and the public works department, official groups such as the city council and city attorney's office, informal groupings such as search and rescue teams and volunteer engineers, and private organizations such as trucking firms and construction companies.

Finally, not all tasks are of equal importance. It can be assumed all tasks are necessary if a community is to respond appropriately to a disaster, but some have to occur before others. Thus, victims have to be found before they can be treated, debris has to be cleared before certain temporary or long-run repairs can be made, or utilities have to be restored before even non-damaged organizations can reopen on a normal basis. Therefore, the effectiveness of any organized response to a disaster is dependent not only on identifying and relating multiple tasks, but also ascertaining which tasks are necessary to the carrying out of other tasks.

3. Activities

Activities represent the actual implementation of domain specified organizational tasks. The distinction between tasks and activities can be easily made by any observer of any disaster response. Tasks are definitions of what should be done by participants; activities are what the observer actually sees them doing. Thus, the difference, if any, between tasks and activities, can partly be used as a measure of effectiveness of response in a disaster. This is what is needed to be done. This is actually what is being done. Since activities may or may not conform to task definitions, the difference between the two can be used to make an evaluation of effectiveness.

As indicated earlier, activity rather than passivity characterizes behavior before, during and after disaster impact. This is true whether we are talking of individuals, small groups, large organizations or the community as a whole. However, activity per se is no indicator that anything is being achieved. In some disaster situations, it is clear that the bustle of organized actions obscures the fact that much of the activity is often non-goal directed or lacks focus. In fact, it is the function of effective disaster planning in part to reduce unnecessary activity and to give guidance to such organizational actions as are undertaken.

However, it is not possible nor should attempts be made to spell out in disaster plans, all the activities that should be carried out in connection with tasks. For example, supplying of an area might require an airlift operation. Very many concrete activities would be involved in such an operation. But only the general tasks should be dealt with in disaster planning -- such as the receiving of communication requests for supplies, arranging for transportation to the airlift area and the scheduling of air transport, etc. What people would physically do to carry out each of these tasks could vary considerably, but the successful performance of domain-specified tasks can only be determined by observing and evaluating the actual behavior of those responding.

4. Human and Material Resources

An organized response to a disaster, whether by an organization or a community, requires people and physical resources. People provide resources in that they have a range of skills and sets of knowledge, many of which can be used in organized responses to disaster demands. Physical resources may take the form of material items, specialized equipment or particular kinds of facilities. Domains, tasks and activities are all generally useless unless there are resources that can be brought to bear in the emergency situation.

Agent- and response-generated demands in a disaster require a broad range of human resources. Some activities such as answering the telephone or delivering messages from one locality to another, require little more than common sense knowledge and quite ordinary abilities. However, some activities require rare skills or knowledge. Activities such as operating most radio equipment or removing hazardous power lines cannot be done by everyone. Meeting demands effectively entails success in mobilizing a wide range of human resources relevant to the numerous required tasks in a disaster.

Normally, organizations needing specific human skills can recruit for them or train their own members. This is difficult to do when there is a sudden emergency. Persons cannot be trained that quickly. Recruiting persons with appropriate skills is seldom possible too, although sometimes volunteers do have relevant talents. However, in general, most organizations must "make do" with the human resources at hand. Therefore, disaster planning should try to assure a fit between likely available skills and immediate emergency demands, rather than suggesting much on-the-spot training. Borrowing personnel from outside the stricken area is usually not too feasible since such persons must then be fitted into a local organization with which they are not too familiar. The only exception to this is in the case of some utility workers and hospital personnel where the job position is relatively similar in the same kind of organizations in different places.

We should mention something often not thought of as a type of human resource. Certain positions in a community, such as elected and appointed officials, have legitimate authority to participate in decisions which affect the community as a whole. This legitimation can carry over into disaster situations. The participation and cooperation of such individuals provides an important resource for organized response. It tends to identify the responses as legitimate or authorized to act decisively on behalf of the community. Thus, identification of organized responses with the mayor's office or civil defense office may facilitate coordination and cooperation on the part of other agencies or the public.

Effective organized responses in disasters very often require material resources as well, such as specialized equipment or facilities. As in the case of human resources, such resources may have to be used during the actual emergency period itself. One frequent problem is finding the actual location of such physical resources in the local area. Unless there has been a pre-crisis inventory of items most likely to be needed during an emergency, an incredible amount of time and effort can be wasted in hunting for what otherwise are easily available resources.

In some cases, sources outside the community may be able to provide some of the material resources. Unlike the case of human resources, there is less of a problem in using a non-local item in the local community. Electric generators, bulldozers, shallow draft boats or burial caskets -- to mention a few likely items that can be gotten or borrowed -- are usually as easily used in one locality as another. However, personnel with special skills are sometimes required to operate specialized equipment or facilities, a factor occasionally overlooked in emergency planning.

Types of Organized Response

As indicated in our discussion of organizational domains, there are many different groups involved in a community response to a disaster. The range in size, formal structure and duration in time may be considerable. On the one hand, very large, bureaucratic and traditional organizations such as a city police department or a public works department may be part of the response. On the other hand, equally involved may be rather small, highly informal, and temporary groups that emerge to handle debris clearance or to develop lists of missing persons. However, almost all groups that appear in a community emergency can be classified as being one of four possible types.

The four possibilities can be derived from considering the fact that some community organizations have tasks within the emergency period which are essentially the same as those they undertake during routine or pre-crisis times. Other groups, however, have basically new tasks. In addition, some groups maintain a similar set of internal social relationships from the normal to the emergency period, while others develop a completely new set of relationships. We can cross classify these dimensions of tasks and relationships and come up with the following typology:

RELATIONSHIPS	TASKS: Regular	TASKS: Non-regular
Old	TYPE I Organizations (established)	TYPE III Organizations (extending)
New	TYPE II Organizations (expanding)	TYPE IV Organizations (emergent)

TYPE I. This is an established organization carrying out regular tasks. It would be exemplified by the regular members of a city fire department fighting fires in the impact zone after an earthquake has struck the community. The domain of Type I organizations is usually mandated by an official charter, and tasks are often specified in writing. The organization responds in the form of concrete disaster-related activities, many of which are traditional and involve a standard mobilization of human and material resources.

TYPE II. This is an expanding organization with regular tasks. These kinds of groups are often the result of community or organizational planning. The

overall organization exists on paper, with the core of the group existing prior to the disaster event. This would be illustrated by Red Cross volunteers running a shelter after a hurricane, but supervised by permanent Red Cross local chapter officials. Type II organizations usually have stand-by human and material resources. Expectations about their domain are usually quite clear, both to themselves and to the community. Their ability to respond effectively is dependent upon their defining and integrating the many tasks and activities of often large numbers of volunteers. A new set of relationships has to be developed.

TYPE III. This is an extending organization which undertakes non-regular tasks. This is illustrated by the construction company which utilizes its men and equipment to dig through the debris and assist during rescue operations after a tornado. In this case, an organization with the necessary human and material resources must extend or redefine its domain in order to be relevant to disaster demands. It then becomes a problem of clarifying tasks so that the appropriate activities can be performed.

TYPE IV. This is an emergent group which becomes engaged in non-regular tasks. An example is an ad hoc group made up of the city manager, county civil defense director, a local representative of the state highway patrol and a major from the Corps of Engineers who coordinate the overall community response during a flood. These kinds of groups may have no previous structure or resources and must establish all the basic elements of an organized disaster response. New definitions of domain and tasks are required; human and material resources must be identified and mobilized; and concrete, relevant activities performed. In communities with well developed emergency plans, the emergence of some such groups can, of course, be preplanned (a point which we shall discuss later).

These groups and organizations involve the range of organized activity within a community attempting to cope with the impact of a disaster agent. There is a definite pattern, however, to the sequence of involvement of these organizations and groups in disaster activities.

Type I organizations are initially involved in any community emergency. There are public and organizational expectations of becoming involved, either on the basis of previous activity or as a result of the definition of the emergency domain of the organization. Because of their existing structure and resources, these organizations can generally mobilize quickly and efficiently. They have mechanisms for assessing the demands which will be made on the organizations. If the disaster demands made on the community can be handled primarily by Type I organizations, the activating event tends to be treated as a localized community emergency rather than a disaster.

Organized responses involving Type II organizations usually occur next. These organizations are in a state of readiness. Both the community and their own definition of domain move them toward mobilization and involvement. These organizations, however, generally have only a small, central, permanent cadre of workers during non-emergency periods. Also, while these organizations have emergency domain responsibilities, their normal-time activities are often not directly related to existing or current community emergencies. It is clearly

expected, however, that these organizations will become active during a disaster. In one sense, the pre-crisis group can be seen as the nucleus with a stand-by domain to be activated for anticipated demands in large-scale disasters. When disaster occurs, the pre-emergency cadre provides a name and a core of permanent workers for the new structure of expanding organizations. These organizations tend to be mobilized in the event of anything but a most localized emergency, but their mobilization is slower and more difficult than for the Type I organizations.

Type III organizations are probably the most numerous of all organized responses in major disasters. Often they do not stand out as clearly because their members frequently work in conjunction or integrate with Type I and Type II organizations. For example, a citizen's band radio club may help man or provide the operators or equipment for a Red Cross communications network. The participants, however, act primarily on the basis of their pre-disaster group affiliations. That is why they became involved in the first place. Some Type III organizations may get activated at about the same time as Type II organizations. But most of them become involved later because their domain is less clear cut. These organizations become involved because they are community oriented or because they possess certain resources which become relevant to the emergency. This means that their participation tends to be delayed until domain and tasks are identified which they can undertake.

Type IV groups are usually small and relatively short lived. In many instances, especially without prior planning, their domain and tasks are not clear cut. Their resources, particularly of a material nature, are usually limited and their activities may take the form of much "trial and error" in those cases where again there has been no prior planning for their emergence. Still Type IV groups do emerge in major disasters and almost always play an important role in the overall community response.

The more important Type IV groups do tend to appear last in the sequence of organizational involvement. This is because their emergence is dependent upon the appearance of the other three types of organized response just discussed. While Type I organizations might be able to cope with a localized emergency, the increased scope of disaster tends to assure the involvement of Types II and III. With the involvement of all three types, as indicated earlier, coordination among them often becomes a problem. Also, there may be a lack of information during the emergency period. These are tasks which have often not been anticipated and are not a formalized aspect of any organization's domain. Thus, new groups often emerge to deal with such unanticipated or new tasks. Consequently, if the response-generated demand of coordination is not being met, an ad hoc coordinating group is likely to emerge. Planning, of course, can assure that Type IV groups will systematically emerge as a result of the activation of disaster plans rather than accidentally and on an ad hoc basis.

Integrating the Basic Elements

Individually, the four elements of organized response are only parts of the whole response. All the elements are necessary for any community response. Activities not guided by domain and task definitions are like bodies without brains -- a contradiction, an impossibility. Some shared definition of domain and tasks, however poorly stated or articulated, underlines all organized activities in disasters. Furthermore, without human and material resources, aligned in an appropriate manner, activities could not be performed. Organized response in a disaster cannot occur without all four elements being present.

However, that is not enough if a good community response is desired, as over against just having a response of some kind. For an actual, effective and efficient response to occur, domain responsibilities, tasks, human and material resources and activities must all be fitted together. The elements have to be integrated or consistent to meet the existing disaster demands in any given emergency. If they are, an organized community response with minimum problems and maximum results can be expected.

A consistency in elements occurs when domains serve as guides to how tasks are defined; when activities correspond more or less to task definitions; and when human and material resources are sufficient so that activities can be performed. A consistence in these elements is a fundamental prerequisite for effective organizational responses. For example, if domain calls for a search-and-rescue operation, tasks involving the issuing of press releases, or the decontamination of canned foods or the repair of electrical lines would be clearly inappropriate. Similarly, human resources such as the ability of some personnel to test water for contamination would not be relevant.

Of course, gross inconsistencies such as those mentioned would be obvious to those participating in organized responses. But in many cases, inconsistencies which are important but not as obvious are less readily recognized. This raises an important issue about disaster responses; i.e., how elements are adjusted toward consistency during the actual response. What factors lead to adjustments in the basic elements?

We have already discussed this with regard to domain. Organizations alter or abandon pursuit of everyday values in favor of meeting high priority disaster demands. They seek a domain which seems relevant to the disaster context. Of course, what an organization can do is dependent upon the resources it has at its disposal. An airline lacks the resources to shift domain to first aid operation, but it could shift to a supply transport domain.

Adjustment in tasks tends to be toward consistency with domain definitions. An organization may, therefore, reduce the number and variety of tasks by suspending those not relevant to disaster demands. On the other hand, demands which require new task definitions may arise. Development of new tasks is limited by what is relevant to the disaster domain and what can be supported by available resources. Tasks which call for resources or activities beyond organizational capabilities cannot persist.

Adjustment in activities is influenced by a continuous assessment of whether they are fulfilling defined tasks. They may be adjusted frequently because disaster seems to be a situation where new or innovative means of approaching a problem are more prevalent than in normal times. People more frequently "go by the book" during normal periods. But in disaster situations, people feel less constrained to follow prior activity patterns. In disaster the expansion of the citizenship role implies that it is everyone's business to meet disaster demands. Thus, people and organizations seek solutions in ways which are seen as best at any particular moment.

Thus, disaster demands, a strain toward consistency in the elements at any one time, and the legitimacy of innovation in the disaster context can lead to rapid and extensive modification of organized responses. These factors make anticipation of the exact nature of any given response more difficult to anticipate and control. However, an indication of the factors influencing the direction responses may take, suggests what disaster planning must take into account as well as providing insight about ways in which overall response might be better controlled.

Emergency planning is clearly important to integrating the basic elements of organized disaster response. The agent and response-generated demands indicate the important disaster problems which must be handled. Domains must be specified, tasks defined, resources identified and mobilized and task fulfilling, concrete activities anticipated and efficiently performed. Integrating the elements would only be a small problem if demands were light and but a few responses were required. But, as we have pointed out, disaster demands are varied and severe and a host of organized responses must be performed and integrated. Thus, we are talking about not one domain, but several; not a few tasks but many; not a simple allocation of human and material resources, but a complex process of mobilization and implementation; not an easy performance of routine activities, but a vigorous, sustained and partly new division of labor.

Planning should, therefore, clearly be an important consideration for any responding organization. The aim is to reduce uncertainty through anticipation of what the situation requires. Planning is perhaps even more important for the community at large. In order to have an organized and integrated community response, organizations must be aware of the domain of other organizations to avoid unnecessary duplication and confusion. This is a planning dimension. Domain definitions and mutual understanding among responding organizations, brought about by pre-planning, results in shared expectations about the response effort. The end result is a relatively clearly defined division of labor in the community caught in a disaster situation.

Observations of actual disaster behavior indicates that where problems and confusion develop, it is largely a product of ambiguity in definitions of domain and task These problems can at least partly be overcome by pre-planning. Planning is not cure-all. All disasters present in some measure unanticipated contingencies and difficulties. In those cases, action has to become innovative and emergent. However, planning will clearly improve any organized response effort by identifying what in all probability must be done, how it should be done, and what resources will be needed. In this manner, organized response can be made more highly predictable and efficient.

Perhaps we can make more specific what we have been talking about by using a concrete example of a particular type of organization. Let us take a fire department. If we were to approach this kind of organization in terms of what we have discussed in this chapter, what would we say?

The domain of fire departments clearly is to deal with fires, either preventing them from occurring or extinguishing them if they do occur. If fact, the fire department domain is clearer and more specific and explicit than is true of many other organizations. Furthermore, it does not change in periods of emergencies from what it is in routine or pre-disaster times--the domain is still that of dealing with fires.

Tasks, however, are somewhat shifted when disaster occurs. Fire departments, for instatnce, tend to set aside their fire inspection responsibility at such times. Fire suppression rather than fire prevention becomes the dominant task.

There is even more drastic shifts in activities at times of disasters. Normally, there are a whole series of activities carried out to suppress fires. There are set routines and all blazes are attacked. Among other things, certain kinds of personnel, apparatus and equipment are always sent to a fire, priority is given to rescuing entrapped persons, blazes are fought in certain designated ways including attempts to prevent their spread to adjoining structures, efforts at salvaging building contents are made, and overhauling is carried out to ensure extinguished fires will not blaze up again. At times of disasters, there may be modifications in all of these activities depending on the overall demands of the disaster on fire departments as well as the situation facing them. For example, priorities may be set on what fires to fight if there are multiple blazes, little effort may be made at salvage in order to concentrate on preventing the spread of a fire from one block to another, and overhauling attempts might be minimized to focus on actual rather than potential problems. The overall situation may force abandonment of certain kinds of fire fighting. For example, during both the 1967 Fairbanks, Alaska and the 1972 Wilkes-Barre floods, firemen had to leave certain buildings and even blocks burn because the surrounding water prevented men and equipment from getting close enough to attack the flames.

At times of major disasters, also, fire departments tend to use human and material resources in a somewhat different way than during normal operations. There may be a shift to the use of larger responding units, the so-called task force concept, although this happens more often in civil disturbances than in disasters. Off duty shifts are sometimes recalled to service. Reserve equipment is occasionally activated. Mutual aid pacts with nearby fire departments may be invoked. Auxiliary personnel are often put on duty.

In almost all cases, however, despite the modifications just indicated, fire departments in disasters remain Type I organizations. That is, they roughly keep their pre-crisis structure and functions. In fact, in most instances, problems usually arise only if fire departments do move away too far from their traditional patterns and get involved in new tasks. In a few disasters, some fire departments have gotten into difficulty because they started to collect a large number of untrained volunteers, not for fire fighting, but for such new tasks as large scale search and rescue or debris clearance.

Of course, fire departments can only work effectively in a disaster if there is both internal and external integration of all the elements of organized response necessary. Almost all fire departments have good plans for internal modification along the lines indicated above. External coordination sometimes, however, presents a problem. For example, it is generally assumed that there can be access to fires but at times of disasters, debris not cleared away by other organizations who have that responsibility, may prevent fire departments from carrying out their own domain.

While we have illustrated our points through the example of a fire department, the same analysis could be made using any other organization. Equally as important as suggesting a way of thinking about the organized elements in disaster response, are the implications for disaster planning involved. We turn to this in the next chapter.

CHAPTER VI

DISASTER PLANNING

In this chapter we specifically consider disaster planning. In the previous pages we made many allusions and passing references to plans for emergencies, but made no attempt at a systematic presentation of the issues involved in disaster planning per se. Before discussing such specifics about disaster planning, however, it will be useful to summarize some of the major points stressed in the earlier chapters, where we raised a series of questions about the nature of disaster and the types of problems it presents for those groups and organizations which have responsibility for community emergencies. In the course of this review, it will be possible to point out some general planning implications which will lead into our other discussions about disaster plans.

A Review of Basic Points

Chapter II discusses characteristics of agents and impacts in an attempt to make clear the differences between various types of disaster events. Our point was that disasters vary in many ways and that it is necessary in planning to take into account the range of ways in which disaster agents can differ. In this regard, we suggested that planners should be knowledgeable about the following characteristics of disaster agents: predictability, frequency, controlability, speed of onset, length of forewarning, duration of impact, scope of impact, and intensity of impact.

In terms of the above characteristics, for example, a planner might ask himself how he would describe a flood, a frequent threat to private and public security. Furthermore, in describing flooding, what would be some of the implications for the community affected, e.g., probably extent of geographic area involved, likelihood of personal and property damage, possible degree of community disruption, and any unique factors or problems which might result from this particular type of agent? If planners do not recognize and understand these kinds of characteristics, it becomes very difficult to anticipate their consequences.

After considering time phases in disaster (pre-disaster, pre-impact, emergency, recovery), we next discussed disaster agent-generated demands: warning, pre-impact preparations, search and rescue, care of injured and dead, welfare, restoration of essential community services, protection against continuing threat, and community order. These demands dictate distinct disaster domains and associated tasks which have to be performed by someone if organized disaster response is to be at all effective in minimizing human and material loss.

With regard to these demands, there are at least three general questions which must be considered by emergency planners. First, what are these disaster

demands and how does their priority vary with different types if disaster agents? Second, who is going to assume these domains and the many tasks they imply? Third, how are these tasks going to be accomplished? For example, consider the domain of care of injured and dead. How do tasks change with various types of disasters, say flooding as opposed to an explosion? Which, if any, local organizations have responsibilities to perform these tasks? What other local organizations can be of assistance? What resources are required to perform these tasks? When and how much assistance can be expected from regional, state, and even federal levels? These questions as well as many others will arise during the process of planning. That is why this exercise in anticipation is so important.

We then discussed response-generated demands. These included communication, continuing assessment of the emergency situation, the mobilization of human and material resources, coordination, and control and authority. Our major theme there was that these demands were not created by the disaster agent itself, but by the very activities that take place in response to the disaster agent.

With regard to these demands, there are again a series of general questions that ought to be considered by emergency planners. First, in what ways can response-generated demands differ given possible different combinations of agent-generated demands? For example, if search and rescue is a dominant demand instead of welfare, what differences in planning about communication should this make? Second, what group should assume responsibility for response-generated demands, and how is this related to what group is carrying out agent-generated demands? Thus, planning might have to consider if the police should be given responsibility for continuing assessment of the emergency situation if they also have tasks associated with maintaining community order. Finally, how are the response-generated demands going to be met? For instance, which organizations will have to coordinate their activities and how can this be arranged in prior plans?

In a very rough fashion the planning process can be visualized in a chart such as the one which appears on the following page. Along one dimension there are the demands, and along the other dimensions there are three key questions that can be asked of each (and in each case, certain other questions are implied). The empty cells, of course, are what planner ought to fill in, although in any actual planning there would have to be a series of such charts for different kinds or classes of disaster agents.

Chapter III was devoted to a discussion of myths about disasters. In some respects, this chapter stresses what is probably the most important point made in this whole report. Too many people, including disaster planners, accept these myths as facts. They mistakenly assume that certain kinds of problems will exist. There is clearly a long tradition to such myths as that disaster situations are marked by widespread panic, passive victims, extensive looting, low morale, ineffective local organizational response, and a general tendency towards chaos. Disaster planners must recognize the mythical nature of these beliefs. They should not only attempt to dispel the myths; they should consciously check that their disaster plans do not make the incorrect

assumptions involved in the myths. Planning and policy decisions should be based upon facts, not myths; upon the real and actual disaster problems, not unimportant or imaginary ones.

	What is the demand?	Who will assume responsibility for the demand?	How is the demand to be met?
Agent Demands			
Warning			
Pre-Impact Preparations			
Search & Rescue			
Care of Injured and Dead			
Welfare			
Restoration of Community Services			
Protection Against Continuing Threat			
Community Order			
Response Demands			
Communication			
Continuing Assessment			
Mobilization			
Coordination			
Control & Authority			

It is perhaps important to stress that it is not enough that disaster planners themselves get rid of the myths in their own thinking. If others with which they deal in planning, or persons to whom are assigned emergency responsibilities, continue to believe the myths, the outcome in an emergency is likely to be almost as bad as if the planners themselves operated with incorrect assumptions. People act on what they believe. Thus, disaster planning requires in part an education of others about the real nature of disasters and the actual problems that are likely to be encountered. Whatever group has responsibility for disaster planning in a local community, must of necessity also take on a teaching role in that locality if disaster plans are to be good ones.

Chapter IV contrasts normal community processes with the changes that occur at times of disaster. It was pointed out that disasters not only create new tasks but actually task subsystems, and these subsystems must be coordinated with one another if the response is to be effective. This requires the mobilization of resources -- particularly manpower, economic and loyalties. When

this mobilization has occurred a new community structure has come into being. However, all this occurs under conditions characterized by the following: uncertainty, urgency, the development of an emergency consensus, expansion of the citizenship role, convergence, and the deemphasis of contractual and impersonal relationships. The purpose of this discussion was to provide some insight into what typically occurs in large scale emergencies. In some respects, this chapter is a counterpoint to the previous one that dealt with myths. In Chapter IV, we discuss what actually and generally occurs rather than what is supposed to happen in disasters.

In some respect the major implication for planning in this chapter is that opportunity rather than breakdown in community structure under stress is what should be kept in mind. That is, emergency conditions are such as to allow things to be done that otherwise could not be done. Thus, planners need to orient their plans so as to take advantage of opportunities for changed community response rather than concentrating on old patterns of activity. The normal pattern of community activity cannot be taken as a complete model of what can or cannot be done in an emergency. There are new tasks in a disaster and to an extent this requires a new community structure.

Finally, in Chapter V we suggest some ways of thinking how a community organizes itself in response to a disaster. Such notions as organizational domain, organizational tasks, organized activities, and human and material resources were advanced as concepts with which to think about the major elements involved. It was then indicated that in a community disaster four different types of organized response tend to appear: established, expanding, extending and emergent groups or organizations.

The major planning implication of this chapter was the need for overall coordination. There are different elements and different groups involved in most community disasters. All of the elements and all of the groups have to be integrated together if there is to be any effective response to an emergency. This requires planning.

An Overview of Important Planning Considerations

In essence, disaster planning is an attempt, prior to the actual occurrence of a crisis, to facilitate recognition of emergency demands and to make more effective the community response. It is an exercise in the anticipation of what might be required of any relevant group or organization. It is the taking of steps to insure that the response is organized. If there has been no planning in the sense of anticipating problems and of taking appropriate measures, the emergency activities in a disaster will be segmented and limited in scope, as well as controlled by immediate happenings. But with planning there is an overall and integrated response strategy geared to important although not necessarily obvious problems.

Among the issues most important to consider in developing disaster plans are those having to do with priorities, overlap of responsibilities, the division of domains, performance of tasks, interorganizational relationships, and levels of planning.

The following planning considerations represent ideals which can never be perfectly attained. We feel, however, that they can be approached. Even though planning can never be complete, can never fully anticipate all contingencies and problems, the effort of going through the process of planning is highly beneficial. At the very least, it forces organizations and communities to think in terms of disaster response and associated problems. Hopefully, an ongoing planning process will provide for adequate and efficient disaster response.

A. Priorities

It should be clearly recognized that all the features and demands of a disaster situation cannot be anticipated. Nevertheless, consideration of the implementation of disaster domains should lead to quicker adaptation to disaster conditions and more effective response. In many cases, organizations have multiple domains in responding to disasters. Because all organizations have limited human and material resources, problems may arise in determining which of the many possible domains should be given priority. This is particularly true when disaster demands upon an organization exceed its capability to handle them simultaneously. Sometimes the most obvious or immediate demands may be met at the expense of less obvious but more critical ones. Therefore, the problems of organizational response to disaster may be reduced and be made more amenable to critical disaster situations by specifying priorities among the various group responsibilities. For example, local police departments may be involved in warning, convergence and traffic control, communications, coordination and various other problem areas in addition to normal tasks. Red Cross may be involved in care for casualties, feeding and housing of survivors and various other welfare services. Departments of public works have numerous debris clearance demands during disaster, but also have resources of possible value to other emergency problems, e.g., heavy equipment for search-and-rescue operations.

It is naive to assume that organizations can simultaneously meet all demands equally. And some demands will clearly be more important than others in given disaster situations. The relative magnitude of demands is often difficult to predict before the fact. But that does not mean that priorities cannot be considered and at least tentatively established on the basis of what is known about the potential of various disaster agents. In connection with this, planners should consider ways to make allocations of resources flexible enough so that if priorities have to be changed during the emergency period such alterations are not disruptive. Stockpiling primary supplies and reserve equipment in strategic localities is one illustration of this point.

B. Overlap of Domain Responsibilities

Because definitions of domain are often very broad, there may be overlap of responses of various organizations responding to any given disaster. For example, there may be overlaps of domain between local organizations and various regional, state and federal agencies. Such overlaps of effort are not automatically bad. However, overall disaster response will be helped by cooperation, coordination, and mutual awareness of organizations working on the same problem. If overlap exists, locally or between levels, the overall response will be improved by planning. Cooperative arrangements between organizations working on

the same problem could take the form of further subdivision into two or more mutually exclusive tasks to avoid duplication of effort. On the other hand, particularly in major disasters, the problem may be so essential that duplication of effort might be desirable. In such cases planning can help the effectiveness of response by allowing for coordination and cooperation of organizations addressing the same problem.

Basically, cooperation and coordination during actual response depends upon communication and liaison between the organizations. Plans, where feasible, should include definitions of the means of communication and the assignment of responsibility for establishing liaison. At a minimum, where known overlap exists, awareness in response should be insured by planning. Thus plans for any organization might include listings of other organizations with similar or overlapping domains. Where ongoing cooperation during response seems necessary, plans can specify the means by which coordination may take place. That is, media of communication, liaison personnel, and conditions under which coordination should be sought, can be spelled out.

C. Division of Domains into Tasks

Planning only for the domain of an organization during disaster neglects the problem of implementation at the time of response. Planning for how the designated responsibilities will be implemented can be partially accomplished by dividing a domain into more numerous tasks. Each organization may facilitate the meeting of disaster demands by outlining the tasks which relate specifically to its particular domain. In addition, there are general tasks which can be planned for by any responding organization, regardless of the domain.

First, necessary resources may be vulnerable to the impact of the disaster. Therefore, tasks specifying procedures and responsibilities for obtaining the organization's disaster resources contribute to the objectives of the emergency organization.

Second, both resources and personnel must be mobilized for response. Tasks may be planned which guide the notification, assembly and commitment of people and material at an organization's disposal.

Third, sometimes necessary resources and personal skills are not found within the organizations that need them for their assigned disaster domain. Even where organizations initially control the resources they require, there is need for replacement as people become fatigued and resources are consumed. Therefore, planning can contribute to response by outlining outside resources and specifying the tasks involved in acquiring them.

Fourth, having the required resources and personnel does not mean that they will be used in the most appropriate or best ways. The effective use and distribution of materials and people can be handled by planning. What is needed for particular tasks should be made clear.

Fifth, almost all organizations which respond must adjust and shape their activities to the actual demands of the particular disaster. Thus planning for tasks which involve the continuous evaluation of the emergency situation and the organization's activities can enhance the effectiveness of response. Getting reliable information about the disaster situation and the effects of an organization's activities upon them is usually rather difficult. Therefore, an organization should anticipate the information which is essential (rather than just desirable) for its effective operation. It is important to realize that too much information may be as serious a problem as too little. Consequently, tasks which outline ways and criteria for screening and evaluation of incoming information are often important. Once informational needs are anticipated, planning can turn to establishing the media through which it may be possible to receive and supply important information.

Sixth, if tasks are to be successfully implemented, measures to coordinate and integrate tasks and associated activities will be helpful. Planning for internal coordination should deal with the problem of how the various activities of a given organization are to be fitted so as to complement one another in producing an organized response. Thus tasks and activities should not be considered independently; they must fit into an overall response pattern.

Seventh, normal means of control such as those based upon rules, supervision, and past practice are disrupted by disaster. Usual means such as clear authority structures, official rules, and formal referral procedures are generally not well suited to meet the immediate demands of disaster situations. Such slow-moving and relative unwieldy mechanisms can drastically reduce overall response effectiveness. The problem of planning is to provide alternative means of controlling response which are realistic and flexible given the urgency of disaster demands. Organizations must realize that some latitude and autonomy in decision making is required. Upper echelon officials may be hesitant or even fearful of loss of control. However, the utility of flexibility in this matter is something planners must not only accept for themselves. It is something they must educate others involved in disaster plans to accept also. This is an important function for planners.

D. Planning for the Performance of Tasks

Concrete disaster activities require planning for the performance of tasks. Some tasks will require special skills, and still others require specific resources. The urgency of disaster demands makes lengthy delays due to the lack of needed resources particularly undesirable. Planning, therefore, can enhance the effectiveness of disaster response by thinking through the requirements for performing the various tasks of an organization and developing means for the speedy recruitment of needed personnel and material resources.

An important point concerning the requirements of tasks, therefore, is the location of related resources. Very often necessary resources will be found within the organization. Consideration can then turn to whether existing supplies are adequate for response. If back-up resources are necessary or if

new material resources and/or human skills must be acquired, planning can specify locations and means of acquisition of these requirements. Planning can also consider whether there are any restrictions to be placed upon the use of either internal or external resources which will be needed. It should be especially noted that there are cases where special authorizations are needed to use certain resources, equipment or personnel. Consideration should be given to suspending normal acquisition procedures which are used in non-disaster situations. Where alternatives to difficult and lengthy procedures are not planned, it is likely that the urgency of disaster demands will cause normal routines to be put aside anyway. This will leave no systematic guidelines, and can lead to considerable confusion.

Planning for the performance of tasks in a disaster situation should raise and answer the following questions: Where are the material resources required for the carrying out of each task? Which personnel within the organization should be available to supply needed skills or knowledge? How will these men be relieved in the event of an emergency of long duration? What specific activities will have to be performed? Is there a need to have coordination and control procedures outlined for a given task? Can the planned communications of the organization provide the information necessary? Can some critical information be incorporated into the plan itself, to be on hand when needed?

Planning can think through the requirements of anticipated disaster tasks to determine whether they can be met in the event of disaster. Planning can considerably reduce stress in response by pre-determining viable methods of acquiring a necessity when its availability is doubtful. Effort in response should be concentrated on making greatest use of available capabilities. Time and people at a time of disaster should not be wasted on something that could have been worked out ahead of time.

E. Interorganizational Relationships

In much of the above it has been implied that all the requirements of response to disaster cannot usually be met from within a given organization. Organizations must, therefore, depend upon each other in the course of response. Planning for relations with other organizations can be most critical. In fact, interorganizational coordination is the essence of community-wide planning. In written form a plan may include summaries of the related roles of other organizations and how they will be coordinated, i.e., the reasons for an anticipated relationship and the means by which the relationship will be handled during disaster. In the planning stage such relationships can be thought of as involving either the receipt or supply of assistance to the organization in question. Where the relationship involves the transfer of resources, equipment, or personnel from one organization to another, planning can determine the means of transfer and the conditions under which such assistance is available. It is necessary that the supplying and receiving organizations both incorporate the essentials of the anticipated disaster relationship into their respective plans.

Certain organizations may face the problem of dealing with unsolicited offers of supplies, equipment, and other forms of assistance. It is wise for

organizations which are going to experience many offers to plan means for protecting themselves from the disruption the processing of such unrequested help can cause. If there are no plans, vital organizational personnel needed for more crucial tasks may end up rimarily spending their time turning down offers of assistance or refusing volunteers. Planning, therefore, should seek means to handle and record volunteered help so that it will not impede the main business of emergency organizations.

F. Levels of Disaster Planning

A consideration of interorganizational relationships leads directly into our discussion of levels of disaster planning. The preceding has indicated important considerations for organized emergency planning wherever it occurs. But as already has been noted, planning goes on at various levels. Disaster plans can be and are developed at the organizational level, the community level, the regional level, the state level and the federal level. There can be other levels, of course, but these are usually the most important.

Our concern is with disaster as it impacts the local community. Thus the emphasis had been upon planning as it relates to community crisis-relevant organizations and the community as a whole. It is our judgement that effective emergency response requires overall community planning as well as organizational planning. It is a good situation when civil defense, the local police and fire departments, hospitals, department of public works, the Red Cross, the Salvation Army, mass media groups and other crisis-relevant organizations have undertaken internal planning. It is an even better situation when these plans have been integrated into an overall community response. Unnecessary duplication of domain and tasks is avoided. Disaster-relevant human and material resources can be located, placed on stand-by status, and updated when necessary. Community coordination and control problems can be identified and addressed. A community-wide disaster division of labor can be established, and in general efficiency and effectiveness in overall response can be anticipated.

An important problem in the emergency planning area is that disasters often do not occur frequently enough in any given locality to represent a sustained threat. Because of this, emergency planning is not given high priority in ongoing organizational and community affairs. Or, a severe disaster event may precipitate a flurry of planning for a short period, but later slack off to very little or no effort. Thus, it is possible to find existing disaster plans which are of little value because they have not been updated for several years. In communities more frequently impacted or threatened by disasters, planning tends to be more sustained.

Our point here is that even when planning is given low priority, it can still be very helpful for increasing response capabilities if it is reasonably up to date, understood, and exercised. Emergency planners must develop a strategy of keeping important officials and relevant organizations periodically aware of planning needs and problems. For example, a major fire might be used as an example to point out planning deficiencies or weaknesses in the disaster plans of the community.[1] As stated earlier, we have found that

even though planning can never be complete, can never fully anticipate all contingencies and problems, the effort of going through the process of planning can be highly beneficial. At the very least, it forces organizations and communities to think in terms of disaster response and associated problems.

Of course, disaster response is a concern at the state, regional and federal levels as well as at the organizational and community levels. Some groups, in fact, such as civil defense, the Red Cross and the Salvation Army, and certain utilities tend to have organized operations at several different levels. Furthermore, there are state and federal statutes for expenditures and other forms of assistance during disasters. If the emergency is severe enough, agencies at all levels are likely to become involved. While such involvement is generally recognized, the implications for disaster planning are not always taken into account.

As we noted earlier, local residents and community organizations are somewhat negative towards "outsiders" who, in any way, are seen to take credit for anything the local groups have done. This particular point creates difficulty for higher echelon officials from outside organizations. They often have human and material resources that can be of great value, especially in the later emergency phase and during recovery. Understandably they want to maintain control over their own resources. Yet, the local groups generally welcome outside assistance only if it is not too obviously and too directly under the control of others. Thus, there is a fine line between willingness to accept outside aid and resentment over getting assistance which implies local groups cannot function adequately in the emergency.

Consequently, even local disaster planning has to take into account the relationship of the community to outside groups that might provide help at the time of a disaster. Disaster plans cannot just deal with what will go on locally. There are some things that can be done before a disaster strikes that will prevent difficulties and otherwise moderate potential clashes or conflicts between the local organization and outside agencies. For one, local officials can ascertain the legal responsibilities of other groups, the nature and extent of the help they can provide, and the formal requirements for obtaining such assistance. In particular, community disaster plans should specify the nature of the communication links with outside agencies, including the formal organizational positions with which most contact will have to be undertaken.

It is not enough that the specifics just indicated be detailed in local disaster plans. It is equally important that the outside organizations involved be consulted as to the role they can and will play in a disaster. It is not very efficient for a community disaster plan, for example, to assign some local security functions, say to the state police, if discussions have not been held with that agency to insure that they can and will carry out such an activity. Such prior contact might seem obvious, but it is surprising how often local planners fail to integrate their community disaster plans with the planning of groups outside of their own locality but who are likely to get involved in a local emergency response. Far too often than is necessary, efforts at integrating and coordinating local and non-local responses

occur at the time of the disaster, instead of being prepared for and planned ahead of time.

Weaknesses in Disaster Planning

Today, partly as a result of civil defense activities, it is rare to find an American community of any size that does not have some kind of emergency plans and preparations. On the other hand, when disaster strikes, it is the very rare community, indeed, that finds its plans and preparations anywhere near sufficient or adequate for the emergency. Domains often have not been clearly defined, tasks integrated, resources allocated and efficiently mobilized, and effective disaster activities performed. In what follows we indicate some general weaknesses we have observed in a variety of disaster situations. They do not indicate all the problems that should be considered by planners. However, they do highlight typical sources of difficulty.

1. In many communities, disaster plans do not specifically assign an official or an organization with the responsibility of assessing what the overall emergency is and what it means. In such situations the result is that each group gathers information in terms of its own functions and needs. The discrete pieces of information are retained within each organization instead of being shared or pooled on a community-wide basis. But effective disaster preparations should provide for systematic reconnaissance and other procedures for obtaining a central strategic overview of the crisis.

2. Arrangements for disseminating emergency information to all crisis relevant organizations, mass media sources, and the general public are frequently missing from disaster plans. Attention is usually paid to providing alternative mechanical means of communication, and often for maintaining communications within organizations at times of stress. But procedures for assuring the providing and distribution of accurate information to other organizations, radio and television stations, and the general populace are less seldom considered in many disaster plans. As a result, varying and conflicting accounts of the disaster event generally circulate, and tend to be further distorted in mass communication accounts. Good disaster plans provide for ways of obtaining accurate information and the transmission of it to all interested parties.

3. Some disaster plans do not call for the establishment of some kind of command post at the disaster scene or point of greatest impact. While some disaster events are of such an extensive nature to preclude any such post, most are not. Consequently, there is in such situations no centralized location in the field where information can be obtained as well as collected. Certain disaster plans handle this problem of a field command post by having a mobile van or truck with considerable communication equipment available to be dispatched to a disaster site. More important than the particular means used, is that there be such a central point. A good disaster plan provides, in appropriate emergencies, for such a command post. (This command post should be integrated with the emergency operating center or EOC which

are fairly common in American communities at the present time, but which are not intended for field operations, and have more general policy making and overall control functions.)

4. Much disaster planning does not adequately deal with the problem of interorganizational coordination at the time of a community emergency. Many plans do provide facilities for an emergency operation center of EOC where representatives of different groups can get together. But while the physical facilities necessary are often available, there frequently has been a failure to think through "who and what" should be coordinated. As pointed out in a Disaster Research Center report elsewhere, emergency plans often do not clearly specify exactly what organizational representatives should be present at EOC's and what their specific duties should be before, during and after disaster impact.[2]

5. New emergency domains are often either inadequately specified or not covered at all in some disaster plans. Disasters frequently create new and important domains which must be assumed in the community. For example, the agent-generated demand of search and rescue is very seldom considered the major domain of any existing community organization. Thus, in an emergency unless specified in disaster plans it remains undone or is handled in an unsystematic way by small groups. Likewise, the domain of information clearance (a communications demand) is rarely routinized within the community and consequently in an emergency often several organizations try to assume this responsibility with resulting confusion and possible conflict. Good disaster planning assures that all necessary domains are covered and that the plans clearly specify who is responsible for what.

6. Certain emergency tasks tend to be ignored more often than others in disaster plans. Among those that are sometimes overlooked or not clearly spelled out are the pre-crisis taking of inventories of existing resources and requirements such as food and fuel supplies normally available and needed in the community, the procedures to be followed in the establishment, issuing and using of passes for entry into the stricken area, and the way volunteers are to be used, where and for what purposes. These tasks are overlooked at both the organizational and community levels. Good disaster plans make certain that such kinds of tasks are clearly thought through ahead of time and are assigned to specific organizations, be they established, extending, expanding or emergent groups.

7. There is a tendency, particularly in disaster-prone communities, to plan only for the more likely kinds of disasters. In a sense this is necessary, but there can be unfortunate consequences if no attention at all is paid to less likely possibilities. A disaster plan geared almost exclusively to certain kinds of disaster agents can in some ways be a handicap in responding to other kinds of agents. A community prepared only for hurricanes will find some problems adapting the plan to a flood since the demands in the two emergencies are not identical (e.g., as to evacuation problems, feeding problems, debris clearance problems, etc.). Effective disaster planning takes into account the full range of possible disasters in a locality even though it may concentrate on the more probable likelihood.

8. Very few disaster plans take into account the transition from the emergency period to the recovery period and almost none deal with the inevitable movement to normalcy. Demands, tasks and activities immediately after impact and those several days later will be rather different. Disaster planning should explicitly recognize this, and in fact should indicate rough priorities and general deadlines regarding recovery. In particular most disaster plans are weak in indicating steps for the restoration of community normalcy such as the reopening of stores, the reestablishment of normal work routines, the rescheduling of social events, etc. As indicated earlier, the quicker normal activities can be restored, the better it will be for the community, especially in terms of general morale. There are, of course, all sorts of contingencies that affect how long recovery and normalcy will take, but this is not a good reason for the total absence of guidelines at all along these dimensions in overall community disaster planning.

9. Disaster plans too often remain paper plans and are not rehearsed in whole or in part. Without at least some dry runs it is difficult to determine gaps or other ineffective aspects in disaster preparations. During an actual disaster such problems quickly surface and valuable time and effort must be directed to solving such difficulties under the worst of conditions. There is also a general lack of familiarity with plans if they are not practiced. This increases the possibility of confusion during emergencies. Effective emergency planning requires exercise of disaster plans, at both the organizational and community levels.

10. Related to this last point is the tendency to let emergency plans get out of date. Conditions, such as resources in the community and likely demands are subject to change even over relatively short periods of time. Thus, it is necessary that disaster plans be regularly reviewed and revised. An out of date disaster plan, as we have noted earlier, can in some ways be more dangerous than no emergency planning at all, for it may give the illusion of being prepared. Effective disaster planning requires a specific revision of plans, preferably triggered by some relatively automatic system of review (e.g., by examination of the plans on specific dates such as before the local tornado, flood or hurricane seasons, and exercises of such plans).

Some Final Recommendations

In our earlier discussion in this chapter of planning considerations, we specifically discussed problems involved in establishing priorities among domain responsibilities, the possible overlap of domain responsibilities among various organizations, the division of responsibilities in tasks, planning for the performance of tasks, interorganizational relationships and levels of disaster planning. In each case we suggested what planning should include as a means of integrating the basic elements of organized disaster response (i.e., domain, tasks, human and material resources, and activities). The purpose of these recommendations was to help planning be a more useful guide for organized response to disaster -- to clarify what an organization should do and to consider the circumstances under which an organization ought to undertake various tasks and activities implied by their general domain.

We want to conclude this report with a brief discussion about some general strategies for bringing about effective overall community planning for disasters. It is assumed here that for certain purposes effective planning requires the following: first, that emergency-relevant organizations within the community develop plans which incorporate the basic elements of organized disaster response; second, that the various organizational plans be integrated into community-wide planning so that an appropriate division of labor is established; and third, that planning at the local level be integrated in some way with the sources of ourside assistance that always become operative at times of major disasters.

1. We believe that knowledge about disaster agents and impacts, agent- and response-generated demands, the disaster context, and the basic elements of organized disaster response are fundamental requirements for adequate emergency planning. For example, if tornadoes are a recurrent threat, then more should be known about them. This type of information should be circulated, in oral and written forms, to the various crisis-relevant groups and organizations which will have key disaster domains (e.g., police and fire departments, hospitals, the Red Cross, the Salvation Army, utilities, departments of public works, etc.). The collection and distribution of this knowledge should be the responsibility of some community agency involved in overall emergency planning. The local civil defense office would seem an obvious choice in most American communities, especially since no other group is likely to take the initiative in providing such information.

2. Crisis-relevant organizations should be strongly encouraged to develop their own disaster plans. If a community has little history of disasters and little apparent threat from most disasters, this will be difficult. Planning tends to be given low priority when the potential for danger is perceived as being minor. Nonetheless, encouragement to planning can be provided by simply calling attention to a possible problem, by the providing of the factual information indicated in the previous paragraph, by the presenting of examples of model organizational disaster plans, by checking back after an initial inquiry to see what progress has been made, and by offerings to evaluate such disaster plans as have been developed. Here again the local civil defense office would seem a most logical candidate to engage in these activities.

3. If knowledge about disasters has been disseminated and emergency planning is initiated, the importance of some community-wide planning is easier to sell, so to speak. A particularly useful tactic at this point is to call regular meetings during the year. In fact, once begun, a planning effort should be a periodic part of the regular routines of the community. A few meetings a year of various organizational officials does not require a particularly great expenditure of time or much preparation on the part of participants. The purpose of these meetings would be to clarify and to reach a consensus about various domains, to anticipate possible problems about resource allocations, to examine potential difficulties in task and activity integration, to establish community coordination and control mechanisms (e.g., the location of command posts and EOC's), and to update and revise plans. Such kinds of meetings would attain considerable legitimacy if influential officials from both public and private groups were participants. However, for such meetings to be successful, some group

has to do some work ahead of time looking over organizational plans, thinking about factors which will require updating of plans, etc. In this context, too, the local civil defense office would seem the appropriate body to call and conduct meetings of this kind.

4. On the basis of these meetings, overall emergency planners should develop and continue to update a written community disaster plan. If effective emergency planning is occurring at the organizational level, the community plan could be relatively short and concise, focusing mostly on mechanisms for bringing about interorganizational coordination. If the community plan is to be the only written document, then it probably needs to be more comprehensive, incorporating relatively detailed subsections for organizations, and given wide distribution. Here again, there is need for some group such as the local civil defense office to take the initiative to insure that the plan will be put into written form and that it will be as broad or as detailed as necessary.

5. Planning at both the organizational and the community levels should involve the making of a general inventory of local crisis-relevant resources, both public and private. This provides a means of judging what local capabilities are available for possible anticipated emergency needs. Particularly crucial here is the periodic updating of the inventory. Some group has to take the responsibility for making the inventory, periodically updating it, and distributing the information to the other relevant organizations in the community. This is not a normal job for any community group, and thus would seem a logical choice for a local civil defense office.

6. Information about and links with non-local community organizations likely to be involved in a local disaster need to be developed. If a disaster is of any magnitude, a variety of groups from outside the stricken area will become involved. Their response to and interaction with local groups is likely to be inefficient if not disharmonious, if there has not been some prior thinking about the nature of the relationship that is likely to be involved. Some local emergency group has to take the responsibility of: a) ascertaining what county, state, regional and federal organizations are likely to become involved in the local scene at the time of an emergency, and b) establishing some sort of contacts, even relatively nominal ones, with key officials in such groups. The local civil defense office, once again, would seem an appropriate group to undertake such an activity.

7. If at all possible, dry runs of overall disaster plans should be conducted. From a practical viewpoint, a total and realistic exercise may be impossible. But some exercise is better than none at all and inability to test the total plan should not be used as an excuse to fail to test it at all. Furthermore, there is reason to believe that dry runs of both organizational and community plans are not conducted as often as they should be because no community group bothers to take the initiative. If some agency such as the local civil defense office were to initiate, periodically run and objectively evaluate disaster exercises, they might occur more frequently in most American communities.

8. Advantage should be taken of the opportunity offered by actual or threatened disasters and/or emergencies. If a disaster hits a community, a maximum effort should be made to institute or revise disaster planning while the event is salient in the thinking of community officials and citizens. Even threats that do not materialize can be used for this purpose. It is true nevertheless that major disasters (or threats Of them) are relatively rare events for most communities, thus frequently leading to low priority in ongoing organizational and community affairs. However, fires happen daily. Many are of course quite inconsequential but some are not. In some ways, such localized events are the only real emergencies that many communities regularly have that even remotely approach a potential major disaster. Thus, they afford a convenient vantage point to push emergency/disaster planning, as well as to evaluate such community plans as do exist for stressful situations. Disaster planners should make more use of these localized events for planning purposes than they typically do in most American cities. Local civil defense offices may correctly argue that their localities are visited by few major threats or actual disasters, but any moderate size community will have fires almost daily. Local fires and major disasters differ in a number of ways, but the former do share some features with the latter allowing them to be used as a means to advocate and to examine community disaster planning and response.

The above represent some strategies for helping to bring about more effective overall community planning for emergencies. One theme running through all of them is that some local community group has to take the initiative, take advantage of opportunities, and also to follow through if anything is goint to be accomplished. Lack of initiative by some official community agency is probably as responsible for poor disaster planning and consequent poor emergency response, as it any other factor in the situation. At the start of this report, we noted the initiative of Noah in preparing for the flood. <u>What is needed for effective and efficient local disaster planning are many more Noahs in communities around the country</u>.

FOOTNOTES

1. One community organization has an interesting advantage over others in that daily it has to deal with on a small scale what it might have to respond to on a large scale in a major disaster. Obviously we refer to fire departments. (While police departments almost inevitably get involved in responding to daily fires also, the degree of their involvement, responsibility and particularly the nature of their tasks are not of the same order or kind as they usually encounter in community-wide disasters). While as already indicated in a prior chapter, the operations of fire departments are not quite the same in ordinary emergencies and major disasters, the differences between the two situations are probably less for the fire department than for any other organization in the community. Thus, in a way, fire departments have more occasions than other organizations to test in a partial way their emergency planning and operations.

2. For a discussion of Emergency Operations Centers, see E. L. Quarantelli, Problems and Difficulties in the Use of EOC's in Natural Disasters, a report to the Office of Civil Defense in March, 1972 by the Disaster Research Center at The Ohio State University.

An Annotated Bibliography on Disaster and Disaster Planning

This bibliography is divided into two parts. The first set of readings listed are all from work done at the Disaster Research Center at The Ohio State University. The subdivisions in this listing are: (1) Monographs, (2) Reports, and (3) Articles. The second set of readings, selectively chosen from the literature, is from work done at other than the Disaster Research Center. The subdivisions in this listing are: (1) Books and Monograhps and (2) Articles. Items have been listed on the basis of their general availability to the public and their direct relevance to disaster research and disaster planning; almost all are of relatively recent date except for some older works that are still of value.

Disaster Research Center Publications

I. Monographs.

1. Thomas E. Drabek, Disaster in Aisle 13: A Case Study of the Coliseum Explosion at the Indiana State Fairgrounds, October 31, 1963, Disaster Research Center Monograph Series No. 1 (Columbus: College of Administrative Science, The Ohio State University, 1968).
   This is a study of 12 community organizations heavily involved in the emergency response to the coliseum explosion in which 81 persons were killed and nearly 400 injured. Included is a description and analysis of the structure, disaster activity, and operational problems of each of the organizations. Major inter- and intraorganizational changes occurring in the year after the disaster are also discussed.

2. Thomas E. Drabek, Laboratory Simulation of a Police Communications System Under Stress, Disaster Research Center Monograph Series No. 2 (Columbus: College of Administrative Science, The Ohio State University, 1969).
   This monograph reports the results of a simulation study of organizational stress caused by a community disaster. A laboratory simulate of the dispatching room and communication system of a metropolitan police department was constructed. Drabek explores the utility of realistic simulation as a methodological technique for the analysis of complex organizations.

3. Russell R. Dynes, Organized Behavior in Disaster, Disaster Research Center Monograph Series No. 3 (Lexington, Mass.: D. C. Heath, 1970).
   This book focuses on a theoretical discussion of community organizations and their activities in meeting problems created by disaster. Dynes draws on the existing literature and the work of the Disaster Research Center. He discusses the different meanings of "disaster" and the social implications of various types of disaster agents. Four tvpes of organized behavior are isolated and discussed.

4. Daniel Yutzy with William Anderson and Russell R. Dynes, Community Priorities in the Anchorage Alaska Earthquake, 1964, Disaster Research Center Monograph Series No. 4 (Columbus: Disaster Research Center, The Ohio State University, 1969).

   This monograph focuses on Anchorage during the emergency period following the 1964 earthquake. A set of priorities of community functions during an emergency were hypothesized and tested in field work at the disaster site. Detailed accounts of emergency activities and chronologies of critical events are included for major areas of community action.

5. David S. Adams, Emergency Actions and Disaster Reactions: An Analysis of the Anchorage Public Works Department in the 1964 Alaskan Earthquake, Disaster Research Center Monograph Series No. 5 (Columbus: Disaster Research Center, The Ohio State University, 1969).

   Adams reports on the disaster responses of the Anchorage Public Works Department to the 1964 earthquake. Analysis based on the extensive field work of the Disaster Research Center, focuses on a comparison of pre- and post-emergency operations in terms of tasks, authority, decision making, and communications.

6. William A. Anderson, Disaster and Organizational Change: A Study of the Long-term Consequences in Anchorage of the 1964 Alaska Earthquake, Disaster Research Center Monograph Series No. 6 (Columbus: Disaster Research Center, The Ohio State University, 1969).

   Anderson discusses the findings of an 18-month field study of the long-term effects of the Alaska earthquake on a sample of 23 Anchorage organizations. Seventeen of these organizations experienced some long-term change as a result of the earthquake experience.

7. George Warheit and E. L. Quarantelli, An Analysis of Los Angeles Fire Department Operations During Watts, Disaster Research Center Monograph Series No. 7 (Columbus: Disaster Research Center, The Ohio State University, 1969).

   This monograph examines in a sociological framework the operations of the Los Angeles Fire Department during the Watts riot in August, 1965. The focus is on three major components of the department and how the structure and functioning of the organization was altered during the disturbance. Attention is given to decision making, tasks, and patterns of communication. The organizational response is viewed in the larger community context and within interorganizational relationships.

II. Reports.

1. George Warheit and Russell R. Dynes, The Functioning of Established Organizations in Community Disasters, Disaster Research Center Report Series No. 1 (1968).

   Established organizations are defined as those who respond to disaster with their regular personnel engaged in familiar tasks.

A theoretical framework is presented viewing established organizations' pre-disaster operations as a situation where capabilities exceed demands. Operational problems in disaster and adaptations to these are discussed.

2. Russell R. Dynes, The Functioning of Expanding Organizations in Community Disasters, Disaster Research Center Report Series No. 2 (1968).
   Expanding organizations are those which have latent disaster responsibilities but must develop a new group structure to achieve them. Case studies are presented of three kinds of expanding organizations -- Red Cross, Salvation Army, and local civil defense.

3. John R. Brouillette, The Department of Public Works: A Community Emergency Organization, Disaster Research Center Report Series No. 3 (1968).
   The pre-disaster structure and functions of a metropolitan public works department are reviewed. The emergency structure and tasks of this department in each phase of disaster, from warning to rehabilitation, are explained. Interorganizational relationships and the role of public works in community response to disaster is discussed.

4. Dennis E. Wenger and Arnold Parr, Community Functions Under Disaster Conditions, Disaster Research Center Report Series No. 4 (1969).
   This report examines disaster-activated tasks at the community level of analysis. After theoretically describing the community in pre-disaster periods, the authors undertake an in-depth analysis of community tasks and activities corresponding to the disaster stages from warning to rehabilitation. Specific inter- and intraorganizational problems are described.

5. William A. Anderson, Military-Civilian Relations During Disaster Operations, Disaster Research Center Report Series No. 5 (1968).
   Anderson discusses the involvement of the military in natural disaster operations and the character of military-civilian relations when such involvement occurs. Data are drawn from the US and other societies. The problem areas of authority relations and coordination are discussed.

6. Will C. Kennedy with J. Michael Brooks and Stephen Vargo, The Police Department in Disaster Operations, Disaster Research Center Report Series No. 6 (1969).
   This report describes the involvement of the police department in natural disaster operations. The organization of such departments in terms of time, function, and authority is discussed as are the implications of these for the department's involvement in disaster tasks.

7. William A. Anderson, Local Civil Defense in Natural Disaster: From Office to Organization, Disaster Research Center Report Series No. 7 (1969).

Anderson considers the functioning of civil defense in natural disasters, focusing on the actual operations of these units within the local community. In discussing the mobilization and expansion of civil defense, Anderson distinguishes between civil defense "office" and civil defense "organization," the latter referring to the expanded post-emergency structure.

8. James L. Ross, The Salvation Army: Its Structure, Operations, and Problems in Disasters, Disaster Research Center Report Series No. 8 (1969).
This report focuses on the disaster relief operations of the Salvation Army, considering the general conditions influencing the participation of the organization in contemporary major community emergencies in America. Assets and problems are discussed, and an illustration of the Salvation Army operations in a hurricane emergency is included.

9. Benjamin F. McLuckie, The Warning System in Disaster Situations: A Selective Analysis, Disaster Research Center Report Series No. 9 (1970).
McLuckie examines the warning process: the compilation of threat data, evaluation and decision to warn, dissemination of the message, and response.

10. Robert Stallings, Communications in Natural Disasters, Disaster Research Center Report Series No. 10 (1971).
Field data collected on 24 natural disasters in the US are analyzed in a summary of communication processes and problems. Three kinds of communication structures are examined: internal, interorganizational, and public-to-organization communication. Typical problems encountered in disaster and their solutions are discussed.

III. Articles.

E. L. Quarantelli, "Organization Under Stress," Symposium on Emergency Operations (Santa Monica, Cal.: System Development Corporation, 1966): 3-19.
Four different types of collective or group efforts to cope with community emergencies, especially natural disasters, are described. Quarantelli suggests how the presence or absence of each of these might indicate the degree of crisis in a community.

Thomas E. Drabek and E. L. Quarantelli, "Scapegoats, Villains, and Disasters," Trans-action (March, 1967): 12-17.
There is a tendency to seek scapegoats to blame for death and destruction in the aftermath of a disaster. Three explanations for the personalizing of blame are discussed, based on studies of the Cocoanut Grove fire of 1942; three airplane crashes at Elizabeth, New Jersey in 1951-52; and the Indianapolis Coliseum explosion of 1963.

E. L. Quarantelli and Russell R. Dynes, "Operational Problems of Organizations in Disasters," Emergency Operations Symposium (Santa

Monica, Cal.: System Development Corporation, 1967): 151-175.

Some consequences of a disaster event for established organizations -- those having pre-disaster existence and performing regular tasks -- and expanding organizations are delineated. Included are the problems of uncertainty, urgency, and lost autonomy. Problems of task assignment, communication, authority and decision making are reviewed.

William A. Anderson, "Social Structure and the Role of the Military in Natural Disaster," Sociology and Social Research 53 (January, 1969): 242-253.

Military organizations often play an important role during natural disaster. Data drawn from the US, Italy, Chile, and El Salvador suggest that the involvement of the military in natural disaster is a function of the structure of military organizations, the structure of local communities, and the structure of societies.

William A. Anderson, "Disaster Warning and Communication Processes in Two Communities," Journal of Communication 19, no. 2 (June, 1969): 92-104.

Anderson views disaster warning as a process of interrelated activities and procedures in which a variety of organizations and individuals becomes involved. The results of a warning study on tsunami threats in Crescent City, Cal. and Hilo, Hawaii are presented.

E. L. Quarantelli and Russell R. Dynes (eds.), "Organizational and Group Behavior in Disasters," American Behavioral Scientist 13, no. 3 (January-February, 1970).

This special issue focuses on disaster as a social disruption within communities. The pattern of social disruption is closely related to the various characteristics of the disaster agent; these determine the nature of disaster tasks to which emergency organizations have to respond. The articles included in this issue are:

E. L. Quarantelli and Russell R. Dynes, "Editors' Introduction."

Thomas E. Drabek, "Methodology of Studying Disasters: Past Patterns and Future Possibilities."

Daniel Yutzy, "Priorities in Community Response."

Will C. Kennedy, "Police Departments: Organization and Tasks in Disaster."

George J. Warheit, "Fire Departments: Operations During Major Community Emergencies."

John R. Brouillette. "The Department of Public Works: Adaptation to Disaster Demands."

E. L. Quarantelli, "The Community General Hospital: Its Immediate Problems in Disasters."

David Adams, "The Red Cross: Organizational Sources of Operational Problems."

James L. Ross, "The Salvation Army: Emergency Operations."

William A. Anderson, "Military Organizations in Natural Disaster: Established and Emergent Norms."

Arnold R. Parr, "Organizational Response to Community Crises and Group Emergence.",
Russell R. Dynes, "Organizational Involvement and Changes in Community Structure in Disaster."
Robert Roth, "Cross Cultural Perspectives on Disaster Response."
E. L. Quarantelli, "A Selected Annotated Bibliography of Social Science Studies on Disasters."

E. L. Quarantelli and Russell R. Dynes, "Property Norms and Looting: Their Patterns in Community Crises," Phylon 31, no. 2 (Summer 1970): 168-182.

The individual perspective and the group perspective on massive looting behavior are contrasted. The authors note differences in patterns of looting in discensus and consensus situations. Looting is explained in terms of the emergence of new group norms at times of crisis. The failure of contemporary social scientists to see looting as normative rather than deviant behavior is discussed.

Daniel Yutzy and J. Eugene Haas, "Disaster and Functional Priorities in Anchorage," The Great Alaska Earthquake of 1964, Human Ecology, edited by the Committee on the Alaska Earthquake of the National Research Council (Washington, D.C.: National Academy of Sciences, 1970): 90-95.

Human behavior during the five-day postimpact emergency period in Anchorage after the earthquake is analyzed in terms of seven community processes and the priorities they received: preservation of life, restoration and maintenance of essential services, social control, maintenance of public morale, economic activity, leisure and recreation, and emergency welfare activity.

Daniel Yutzy and J. Eugene Haas, "Chronologies of Events in Anchorage Following the Earthquake," The Great Alaska Earthquake of 1964, Human Ecology, edited by the Committee on the Alaska Earthquake of the National Research Council (Washington, D.C.: National Academy of Sciences, 1970): 403-424.

Detailed chronology of organizational activities from impact March 27, 1964 is organized in terms of various community activities such as preservation of life, social control and so on.

John R. Brouillette and E. L. Quarantelli, "Types of Patterned Variation in Bureaucratic Adaptations to Organizational Stress," Sociological Inquiry 41, no. 1 (Winter 1971): 39-46.

The authors present a typology of possible patterned variations in bureaucratic adaptations to stress and indicate the factors internal and external to the organization which influence the direction and kind of adaptation followed.

Russell R. Dynes and E. L. Quarantelli, "The Absence of Community Conflict in the Early Phases of Natural Disaster," The Social Science of Conflict Resolution, edited by Clagett Smith (University of

Notre Dame Press, 1971): 200-204.

Community conflict is usually absent in the emergency period following natural disaster. Some reasons for this lack of conflict are set forth.

E. L. Quarantelli and Russell R. Dynes, "When Disaster Strikes," Psychology Today 5, no. 9 (February, 1972): 66-70.

In disaster, people neither panic nor flee; victims respond with self-reliance and mutual help. The authors discuss various inaccuracies and myths about disaster response in affected communities.

Non-Disaster Research Center Publications

I. Books and Monographs:

Allen H. Barton, Communities in Disasters: A Sociological Analysis of Collective Stress Situations (Garden City, N.Y.: Doubleday Anchor Books, 1970).

A theoretical discussion and abstract summary of much of the disaster literature. Barton discusses individual behavior in emergencies, the coordination of organization behavior and the altruistic responses that develop in disasters. Some attention is also given to factors influencing long-run recovery.

F. L. Bates et al., The Social and Psychological Consequences of a Natural Disaster (Washington, D.C.: National Academy of Sciences - National Research Council, Publication 1081, 1963).

This is a longitudinal study of Hurricane Audrey. Most of the description and analysis is about the rehabilitation and recovery activities after the disaster, and long-run social changes. The role of civil defense in both Hurricanes Audrey and Carla is compared.

H. D. Beach, Management of Human Behaviour in Disaster (Department of National Health and Welfare, Canada, 1967).

In this manual on the management of human behavior in various disaster situations, Beach examines the chief characteristics of disaster, the individual and social problems in disasters, responses to warning and evacuation, and rescue and shelter living. The conclusion considers the preparations and training needed for disasters.

William H. Form and Sigmund Nosow, Community in Disaster (New York: Harper, 1958).

An older study about the community response to a Michigan tornado. The major focus is on the rescue behavior by small groups after the disaster, and problems of organizations in mobilizing for the emergency. There is also a discussion on planning for disasters.

Charles Fritz and J. H. Mathewson, Convergence Behavior in Disasters: A Problem in Social Control (Washington, D.C.: National Academy of Sciences - National Research Council, Publication 476, 1957).

This report looks at the informal, spontaneous movement of people, messages and supplies toward the disaster area. Methods and techniques for controlling such convergence behavior are detailed.

Eli S. Marks et al., Human Reactions in Disaster Situations (National Opinion Research Center, University of Chicago, 1954; available on microfile AD #107-594 from the Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, Springfield, Va. 22151).

This report summarizes a series of field studies conducted by the National Opinion Research Center in the early 1950's. The major study in the set is about a series of tornadoes in Arkansas. This is one of the few quantitative studies in the literature.

James B. Taylor, Louis Zurcher and William H. Key, Tornado: A Community Responds to Disaster (Seattle: University of Washington, 1970).

This is an examination of how Topeka, Kansas responded to a major tornado disaster. The bulk of the study deals with the emergence of new behavior, roles and groups in the aftermath of the disaster. Considerable emphasis is given to informal and unplanned responses.

Mattie E. Treadwell, Hurricane Carla (Denton, Tex.: Region 5 Office of Civil Defense, published by U.S. Government Printing Office, 1961).

A detailed and descriptive examination of responses to Hurricane Carla. Among the topics examined are warning, evacuation, reception and shelter, rehabilitation and the activities of emergency organizations and use of emergency facilities.

II. Articles.

Dwight Chapman (ed.), "Human Behavior in Disaster: A New Field of Social Research," Special issue, Journal of Social Issues 10, no. 3 (1954).

This collection of articles includes a description of the work of the Committee on Disaster Studies of the National Research Council and of the NORC Studies in disaster. Among the papers are "Problems of Theory in the Analysis of Stress Behavior" by Irving Janis and "Some Accomplishments and Some Needs in Disaster Study" by Lewis Killian.

Nicholas Demerath and Anthony Wallace (eds.), "Human Adaptation to Disaster," Special issue, Human Organization 16, no. 2 (Summer 1957)

The seven papers in this issue are: "The English Flood of 1953" by John Spiegel, "Typhoons on Yap" by David Schneider, "Some Functions of Communication in Crisis Behavior" by Harry Williams,

"Problems of Perception in Extreme Situations" by F. P. Kilpatrick, "Mazeway Disintegration: The Individual's Perception of Socio-Cultural Disorganization" by Anthony Wallace, and "Some General Propositions: An Interpretative Summary" by Nicholas Demerath. An annotated bibliography of disaster studies compiled by Jeannette Rayner is included.

Dewitt Smith (ed.), "Disaster and Disaster Relief," Special issue, Annals American Academy Political and Social Science 309 (January 1957).
This volume reviews the physical characteristics of disasters including articles on floods, hurricanes and tornadoes, and earthquakes. Disaster planning and activities of several types of organizations are discussed, including: "Coordinating and Extending Federal Assistance" by V. Peterson, "The Impact of Disasters on Readiness for War" by A. Flemming, "The Armed Forces in Disaster Relief" by C. Burgess, and "Voluntary Effort in Disaster Relief" by E. Bunker. A case study by William Stiles on the Yuba City Flood of 1955 is related.

H. M. Finniston (ed.), "Disasters: Their Prevention, Control and Social Effects," Special issue, Advancement of Science 25 (June 1969).
This issue reprints papers given to a symposium August, 1968 at the British Association meetings in Dundee. Included are the following: "Maritime Disasters" by Ayers, "Air Transport Disasters" by Tye, "Natural Disasters" by Latter, "Conveyance of Dangerous Substances by Road" by Black, "Disasters in Bridges and Dams" by Shirley-Smith, "Mine Disasters" by Lord Robens of Woldingham, and "Nuclear Hazards" by Adams.

Gilbert White, Robert W. Kates, Ian Burton, "Natural Hazard Research Working Papers," nos. 1-21 (University of Toronto, 1967-1971).
This series reports on research in progress in the field of human adjustments to natural hazards. In the series is an "Annotated Bibliography on Snow and Ice Problems" (no. 2) and "Human Behavior Before the Disaster: A Selected Annotated Bibliography" (no. 9). Others are: "The Meaning of a Hazard" (no. 7), "Losses from Natural Hazards" (no. 10), and "Natural Hazard in Human Ecological Perspective: Hypotheses and Models" (no. 14). Several case studies are among the papers also.

Ellwyn Stoddard, "Some Latent Consequences of Bureaucratic Efficiency in Disaster Relief," Human Organization 28, no. 3 (Fall 1969): 177-189.
A comparison is made of the relative efficiency of the Red Cross and the Salvation Army in disaster operations. Stoddard concludes the public image of welfare groups comes from the manner in which aid is given, rather than the quantity of relief provided.

Louis Zurcher, "Social-Psychological Functions of Ephemeral Roles: A Disaster Work Crew," Human Organization 27, no. 4 (Winter 1968): 281-297.
Zurcher looks, in a case study fashion, at the emergence of work groups after a tornado. The factors associated with such emergence and the consequences of such ad hoc groups are examined.

Thomas E. Drabek and John S. Stephenson, "When Disaster Strikes," Journal of Applied Social Psychology 1 (1971): 187-203.

The response patterns of Denver, Colorado families to a flood warning are analyzed. Numerous implications for community planning are detailed.

H. J. Friedsam, "Older Persons as Disaster Casualties," Journal of Health and Human Behavior (Winter 1960): 269-273.

Friedsam deals with the question of why aged provide a disproportionate number of casualties in disasters. The reasons why older persons have high incidence of deaths and injuries are discussed

Roy Lachman, M. Tatsuoka, and William Bonk, "Human Behavior During the Tsunami of May 1960," Science 133 (May 1961): 1405-1409.

This article explores the consequences of an ambiguous warning system. Factors associated with differential responses on the part of individuals are examined.

Mel Personett, "Police Planning for Natural Disasters," Police (July-August 1968): 6-12.

The author discusses the need for alert plan, communications, special equipment, property accountability, and priority of police responsibility.

E. L. Quarantelli, "Images of Withdrawal Behavior in Disasters: Some Basic Misconceptions," Social Problems 8, no. 1 (Summer 1960).

Quarantelli examines much of the disaster literature on flight behavior, panic and evacuation. He concludes that the research findings do not support the popular image of wild and irrational behavior. Most victims and involved persons act in a reasonable fashion.